

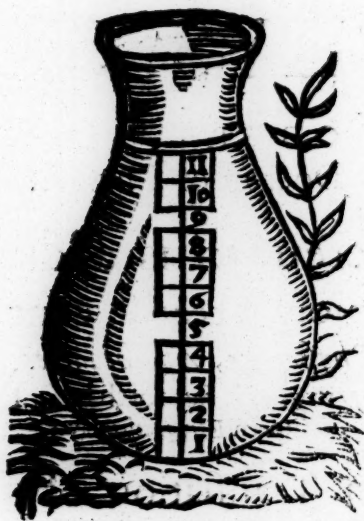
THE
URINAL
OF
PHYSICK.

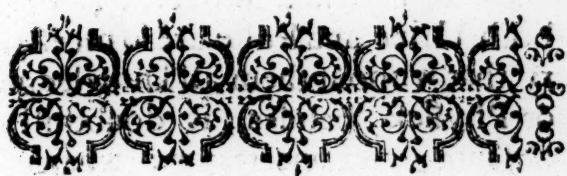
By ROBERT RECORD
Doctor of Physick.

Whereunto is added an
ingenious Treatise concern-
ing *Physicians, Apothecaries, and*
Chyrurgians, Set forth by a Dr.
in *Queen Elizabeths dayes.*

With a Translation of *Papius*
Ahalsossa concerning *Apothecaries*
Confecting their Medicines;
Worthy perusing, and following.

LONDON,
Printed by Gartrude Dawson
1651.





To the Reader.

IF either the corruption, or abuse of things, might deprive us of this lawfull and necessary use of them, even the sacred Scriptures, our laws, our provisions of life and clothing, might fall under declension, if not abolition: It is true from the inspection of Urine, some have presumed to pretend a larger judgement, and indication, then may justly be drawn or conjectured out of it; yet it is generally concluded by Physitians,

To the Reader.

both ancient and moderne, that both Urine and Pulſe are ſo neceſſary, that without them all knowledge of Phyſick, beſides, is doubtfull, obſcure, and uncertaine: whereof the firſt ſheweth the eſtate of the liver and veines, the ſecond of the heart and arteries: The Urine becauſe with the blood it is conuened into all parts of the body, and from thence returneth back again in the veines, to the liver and urinall veſſels, bringeth with it ſome indicature of the ſtate and diſpoſition of all thoſe parts from whence it commeth: and who ſhall pleaſe to peruſe that exact peice of *Daniel Becherus*, ſhall finde obſervable peices, both concerning the urine, and divers experimented medicines made with it. Concerning the judgement of the Pulſe, who ſhall pleaſe to peruſe Doctor

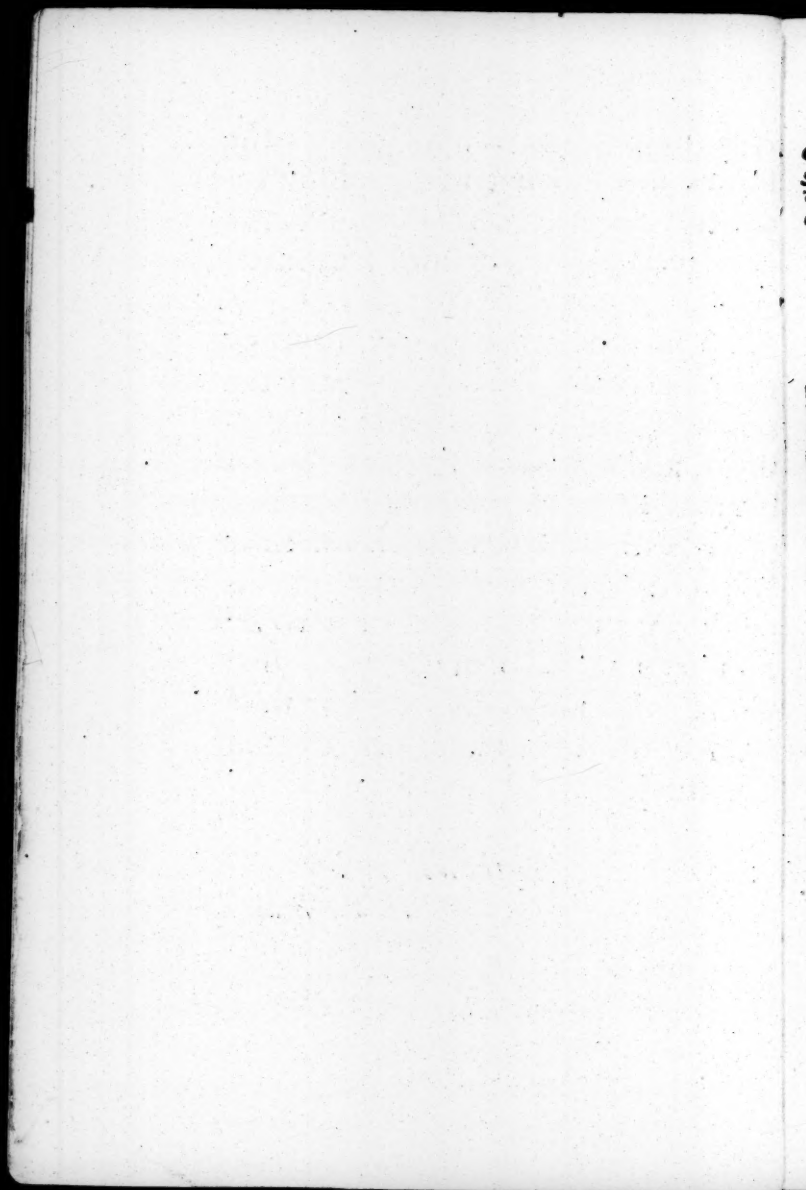
May

To the Reader.

May upon *Pennant*, shall finde the Pulses motion not so certain an indication, because in some diseases there is cessation, or none, or small appearance to conjecture by. Concerning the Author, he was one of the first who labour'd to reduce the tractate thereof, unto order and method, and hath been seconded by laborious *Fletcher*, to whom our English Nation oweth much for their labours: The antiquity and paines of the Author hath caused it to be presented again to the Presse, hoping, with judicious men, it shall receive the acceptance is desired and studied

*By the well-wisher
of your health,*

R. R.





The PREFACE.

THough the unsatiabie greedines of covetous men doe many and sundrie waies hurt, yet some wayes it may do no lesse good, if men will not disdain (as they ought not) to use it in such fort as I shall shew you.

The good use of a covetous example.

But because that unsaciableness is never satisfied, but beside thousand of means invented already to quench the unquenchable greedines, it seeketh and findeth daily new and new means innumerable, so that it were an infinite labour to declare them all. I will wittingly, and purposedly passe them over, only taking one general sentence, which shall be in stead of all the rest.

Vespasian, one of the great schoolmasters of avarice, which could pick out profit of every thing (yea, even of mens urine) taught his Scholers (I meane the whole court of covetous persons) this lesson ensuing :

Lucri bonis odor cace qualibet.

The Preface.

*Lucre is sweet, and hath a good savour;
Though it come of Urine, dirt or Ordure.*

This sentence, if it be withdrawn from the filthy lucre of unsatiabie covetousnesse, wherein it is detestable, and imployed rather to the due lucre of mans sustenance, then it becomes tolerable: But if it bee referred to the necessarie lucre of mans health, then is it greatly commendable. If there can be then any commodity for mans health gathered out of urine, (as there may be much) men should not be negligent in seeking of that thing which should do good both to themselves and others? seeing the covetous are so diligent in seeking for that thing which shall profit neither themselves nor others?

And the negligence is so much the greater, if men be more remisse in seeking after so necessary a thing in a matter so commendable, then the covetous in a bad thing.

But in as much as this thing (by reason it is not plainly set forth) is with no lesse difficulty to be studied on, then it is necessary to be used, the ignorant may have some excuse: I therefore in the name of many other, have taken this pains on me, to set forth this thing so plainly, that ignorance can have no excuse.

Ignorance
set aside.

But that no man should doubt of the truth
of

The Preface.

of this Treatise, or of mine intent, in putting forth the same rather in this our English tongue than any other: I shall briefly shew reasons of both; First, for the truth of it, I will boldly speak, knowing for certain that no man that can judge it, will say or thinke otherwise, but that it is as true as mans knowledge can devise it. And it is the opinion of the most excellent writers of Physick both Greeks and Latine; namely, *Hippocrates, Galen, Aetius, Aegineta, Philothous, Theophilus, Aetuarinus*: also *Cornelius Celsus, Plinius, Constantinus, Africanus*, and *Clementius Clementinus*, with others more, conferring also with these *Avicenna, Egidius, Polidamus*, and such like: But with what temperance and moderation they that are learned may perceive. These have I followed chiefly in this judgement of Urines.

Why this Book is written.

The first reason.

And in the use of medicine and diseases touching urine, I have joyned with them *Dioscorides, Quintus Serenus, Columela, Sextus Platonius*, and divers others. Now if there be any man that doubteth of the truth of those writers in this thing, I am not here to force beleef upon them.

But now as touching mine intent in writing this Treatise in English; though this

The intent of the Author.

The Preface.

cause might seem sufficient to satisfie many men, that I am an English man, and therefore may most easily and plainly write in my native tongue, rather then in any other: yet unto them that know the hardnes of the matter, this answer should seem unlikely : considering that it is harder to translate into such a tongue, wherein the Art hath not been written before, then to write in those tongues in which the terms of the Art are better expressed.

Now to shew briefly the causes moving me thereunto. I am sure, there are but few that ever sought counsell for their health, but they know that the common trade to attain to the knowledge of the disease, is by the judgement of the urine, though not alone, yet as the principall.

Likewise, as there is not any thing so good, but the abuse of it may cause harm to ensue therupon. So this judgment of urines, though it be a thing highly to be regarded, yet if it be used rashly without foregoing signs it may cause (as it doth often) some error in the judgment of the Physitian, though he were right excellently learned : not so much by the ignorance of the Physitian, as by want of knowledge in the patient, which should instruct the Physitian, in such questions as hee needed

The Preface.

needed to demand of him : and not to look that the Physitian should tell him all things at the first sight, more like a God then man.

So that if there be any Physitian so arrogant, that he will take upon him to tell all things alone, and will not hear the Patient speak, specially not knowing the party before, neither seeing other signes but only the urine, as I dare boldly pronounce, That such a man is unworthy to be called a Physitian. So it shall be good for all men, not to trust to the judgement of such a one : for by such mis-use in this thing not only much harme befalls the patients, so that it hath been the occasion of many mens death, but also very much reproach hath ensued to the whole estate and order of Physitians, and hath caused that excellent and most necessary art to bee contemned, derided, and little set by.

To avoid the more this inconvenience, I have written this little Treatise to all men in common, that they may learn to have some knowledge in their own urines, and thereby may be the better able to instruct the Physitian, at the least, what sort of urine they have made from time to time from the beginning of their sickness, and somewhat before.

And also what sort of water they were wont

The use of
this Book.

The Preface.

wont to make in their health? so that if men will be diligent to mark their water in time of health, they shall not only be able to instruct the Physitian (as I have said) but should bee also able to perceive the cause of the disease sometimes before the grief come, and so by the counsell of some discret Physitian avoid the sicknes before it bee fully entred: yea, and by due marking of their urine, they shall perceive from time to time, how they shall governe themselves in meats and drinks, in exercise and rest, and the like things, so that thereby they may eschew both the diseases, and also the causes of the same.

Now what a commodity this may bee to all men, and what thanks he hath deserved that hath taught this so great a commodity to all men in generall, I leave it to every mans own judgement.

And thus (as you may perceive) I have declared the causes of this my pains, taking them to be for the profit of the whole Commons indifferently. Howbeit, if any mean learned Physitian shall be thereby furthered in his judgement, I will not envie him, but will be the gladder, the more number of men I perceive to take benefit by it.

I am sure that the true judgement of urines

The Preface.

rines, according to the mind of *Hippocrates*, *Galen*, and such like, is very hard, though not to excellent Clerks, yet to the meaner sort; partly by reason that it is written so dispersedly in their works, and not in any one Book peculiarly and sufficiently: and partly because that sundry words used in the same (as in the rest of Physick) are obscure to them that have not been exercised in all kinds of learning, and that with the knowledge of both the Greek and Latine tongues. Therefore I trust, that this my pains shall be some help also, to them that lack the exercise of such studie and knowledge.

But because there is a common saying in the mouths of many men now a dayes, that it is a profaining of learning, and a meanes to bring it into contempt, so to set it forth in the vulgar tongue, that every man indifferently may read it, and study it: To this I will briefly answer, that this saying is not onely against many great learned mens acts and examples, but also against manifest reasons: besides, that it encludeth a pernicious kinde of counsell. For if every thing should be put away, or left undone, that evill men may pervert and use to an evill purpose, so should we have no good thing remain: meats and drinks must be taken

The difficultie of Judgement in Urine.

The answer unto it.

The Preface.

taken away, because many abuse of it. And because evill men doe abuse of both eyes, and tongues, shall all men therefore pluck out their eyes and their tongues? Because many men doe abuse lawes and authority, shall men expell lawes and high powers? Many evill men and hereticks have misinterpreted Gods word, yet ought Gods word neverthelesse to be taught vulgarly to all men. Though the Pope, Cardinals, and Monkes, have practised to poyson men, even with the very Sacrament of the supper of the Lord, yet no man will be so mad, therefore to eschue the use of that blessed Sacrament: And yet all this followeth, if men allow that common saying, above written. Better meanes it were to set forth publickly all that might doe good to the publique wealth, and streightly to punish the abuses of them, then to punish good men and good things, because that evill men offend. It is a like error to that sort of doctrine, which contemned wine as an evill thing, because that many were made drunken with it. But to leave this, and to come more particularly to the matter.

What is learning unlearned, or knowledge unknown, any thing else but a vaine name? Learning then encreaseth most, when

The Preface.

it is studied of most : And learning then triumpheth most, when it hath most favourers and followers. And then doth ignorance (learnings enemy) rejoyce most, when learning reigneth in fewest, and blindness ruleth most : so that then is learning most profained, contemned, and hated, when it hath most enemies : that is to say, when most men are ignorant. For that old saying shall alwayes be true : Learning hath no enemy, but the ignorant.

Aske that great Cleark *Plutarch* what his minde is in this : Whether the judgement of health be a meet thing for every man to study : and thou shalt heare him answer : that shame it is for men to observe the crying of Crowes, and such like things in beasts and birds, whereby men judge of the change of weathers, and to be negligent in marking motions within themselves, and alterations preparing unto sicknes. Yea he requireth so exact knowledge in every man appertaining unto health, that he noteth it for a great shame, and calleth it unsensibleness in a man if he be so ignorant, that he shall need to ask of the Physicians, what meats are best for him. And to ask what meates shall best digest in him, is as absurd a question (saith he) as to ask what meats are sweet, soure,

Plutarch his sentence.

The Preface.

soure, or bitter, and such like. Yea beyond all this, he requireth in every man the knowledge of his own pulse, which is a thing harder then the judgement of urines.

Examples
of Writers
in the Vul-
gar tongue.

Now if you require Examples, the whole world is full of them. They that wrote in Greek, wrote in their own vulgar tongue: and so did they that wrote in Latine, write in their own common speech.

Sir Thomas
Eliots Ca-
stle of
Health.

Besides that, have we not infinite examples of Learned men in *Germany*, *France*, and *Spain*, which wrote of Physick in their own tongue? Yea, Is not our own *England* full of Examples? How many Books of Practises? how many Herbals? and other like Books of Physick, hath there been put forth many yeers past? And yet unto this day doe not learned wits sleepe. How much is all *England* bound to that Worthy and Learned Knight Sir *Thomas Eliot*, which took the pains to build a Castle of Health for all English men (besides many other learned Books that he hath put forth in the Vulgar tongue) whereby a man may learn both to govern himself so, that though he escape not all sicknesses quite, yet he shall eschew the great dangers of them? *England* may rejoyce of such a Knight: yea, *England* hath too few that followeth

The Preface.

followeth such example. But if *England* had as many well willing doers as she hath cruell and spitefull disdainers, then were *England* the Flower of all Realmes in the world.

Now will I leave this and draw nearer to my purpose, and will desire all men that shall read this Book, patiently to bear with my boldness, and thankfully to receive my good minde. And if there shall bee found in this Book, or in any other that I shall put forth, a small error or oversight (for greater errors, I dare say there shall be none) I shall desire all them that shall find any, to advertise me thereof by word or writing, and I shall be ready not onely to render condign thanks, but also to amend duely that shall be thought amisse, or else to yeeld a reason for the proof of the same;

And now to make an end : I will desire every man soberly and discreetly to use this my Book, not using it to the taunting or checking of other men : nor to trust in their own knowledge further then they ought.

And likewise I shall exhort all men, not to mock and jest with any Physitian (as some light wits do) tempting them with

B

Beasts

An exhortation to the Reader,

The Preface.

Beasts stale, in stead of mens urine : others bringing to them mens water for womens, and such other like things. For in this doing they deceive not the Physitian, but themselves. For a mans water to be like a womans, it need seem no strange thing. Howbeit, again there is a notable difference, in so much that that water which in a man declareth health, if it were a womans, might declare some disease ; and likewise that which in a woman signifieth health, if it were a mans water, it might betoken sickness. And if a mans water and womans be like, and betoken both diseases, those diseases may be divers and not one.

Yea two mens waters being both alike, shall not declare alwaies one grief, except they agree also in age, diet, exercise, and other like things

Also, that a Beasts Water may be like a Mans (the Mans sickness being thereafter) *Hypocrates* witnesseth, and experience teacheth, as I shall declare hereafter.

Therefore if you seek the Patients health, look that you receive the urine diligently : and as soon as you can, present it to the Physitian, and be diligent to instruct him in all things that you can, and that he

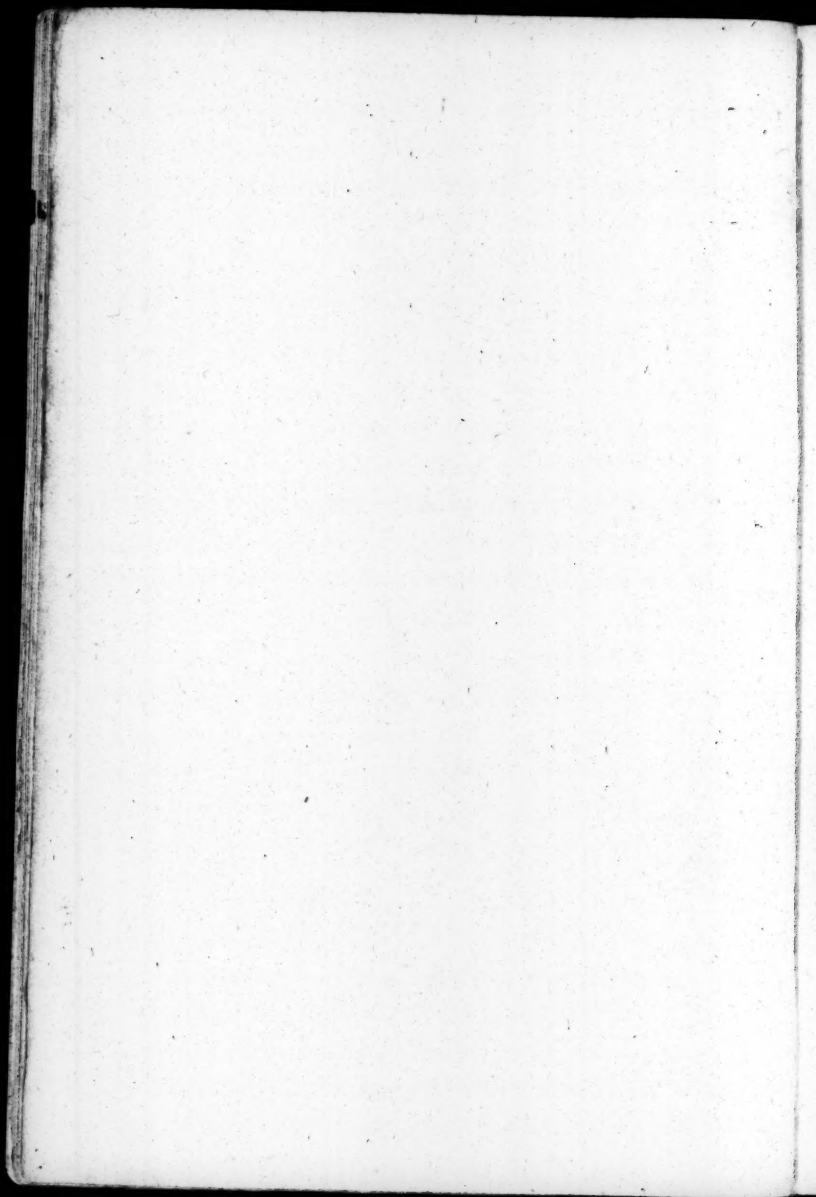
The Preface.

he shall not have need to aske. And so no
doubt, you shall receive great commodity
of that Art, to the health of man,
and the glory of God, which
hath given such know-
ledge unto man.

(* * *)

B 2

THE





THE
URINAL
OF
PHYSICK.

CHAP. I.

Of the Division and Order of this Book.

BEcause that nothing done confusedly can be well understood of the Readers, for every thing the better order it hath, the better it may be understood, and is much more easily remembred, when the order of it is well and certainly known: I have therefore digested this Book orderly, as I shall here set forth, to the intent that you may read, as it were in grosse the whole Book, and thereby keep it the better in remembrance.

The sum
of this
Book.

2

The Judiciall of Urine.

1

First, therefore I will declare the nature of urine, what it is, and how it is ingendred within man, and how it passeth forth from man.

2

Secondly, of the order of receiving it in a convenient vessell. And of the time and place meet to consider it.

3

Thirdly, how many things are to bee considered in urine: and how many wayes they may be altered in a healthfull man.

4

Fourthly, what significations and tokens may be gathered of urine, concerning any alteration in man, past, present, or to come,

5

Fiftly, to what use in medicine urine may serve: and of other good uses of it to mans commodity.

6

And last of all, I will declare certain diseases touching urine, which either let it, or cause it to void unwillingly: with the Medicines and remedies meet for the same.

CHAP. II.

How Urine is ingendred in Man and how it passeth forth.

AS unto them that are learned and know by the Art of Anatomy the scituation of the parts of man, and the naturall office of

of every part, it is easie enough to perceive the originall generation and cause of urine, without any example : so unto them that neither know the scituation, nor offices, no, neither yet the names of the parts of mans body, it is scarce possible to make them to perceive the generation of urine, without some sensible example. But because it is very hard to find an artificiall example, which can alone duely expresse this work of nature, I will use therefore an example of a natural work, which shall expresse in many points this thing, though not in all; for such can there none be, but the thing it self.

And in as much as this example is not easie to be understood of all men, though the most part do now a daies partly know it by experience of finding springs of waters, I will first propose an artificiall example, to make both the other to be the better perceived.

It is daily seen in distilling of Waters, that the temperate heat of the fire doth separate the purest part of the juice from the herbs, and also from the groffer juice. This by naturall lightness is drawn into the head of the Stillatorie, where by the coldness of the helmer, it is made somewhat groffer, and so through naturall heat descendeth and

An example of Still-
ling.

passeth forth by the Pipe of the Stillatorie.

The Originall.

Cause of springs.

And as the Art of man useth to make this water, so doth nature use to make the water of springs, whereof come all rivers, streams and floods, except the sea. For seeing the earth is not perfectly sound and thick of substance, as stones and some woods appeareth to be, but it is hollow and full of holes, as you see that cork is : so that the air which by his subtileness pierceth into never so little a hole, entreth and filleth this hollownes, nature so leading to it, because no place should be emptie : In which place by the coldness of the earth, the air is turned into water, as you may see in walls and pillars of stone, namely, of marble, how the coldness of the stone turneth the air into water, and hangeth full of drops, which sometimes trickle down apace, as if they did sweat. So when the earth hath turned the air thus into water, then doth it drop down and gathereth together, and so runneth out as it can finde or prepare way. As long therefore as there is hollownes in that place, with such sort of coldnesse, and none other let, the Spring of water shall never cease. But if the way by any means be stopped, then the water turmoileth and labour-

laboureth, either to expell that let, or to make a new way.

Now this water being thus ingendred of the air which hath no taste, is also naturally without all taste: but the tast that it hath is the taste of the vaines of earth or mettall, by which it doth run. And that is the cause that some waters are sweet, and some soure; some fresh, and some salt, and otherwise diversly tasted; some also are hot, and some cold, and with other like qualities endued, according to the ground whereby it passeth. But of this I will not now speak, because I have appointed for it a peculiar Treatise, if God grant me time: Only this I say now, that a man that is expert, can by the colour, tast, and other qualities of the water which he seeth, tell what vains of earth or mettals is in that place whence that water cometh, though he see it not.

The causes
of diversity
in tast of
Water.

And this water is expelled out of his first place, as unprofitable there to remain; and yet when it is come forth thence, it is good for divers and sundry uses.

Thus may we thinke of the generation and use of urine or mans water.

The gene-
ration of
urine.

It shall not need that I here reckon exactly the places, causes, and the order of the three concoctions which go before the generation

Three Con-
coctions.

neration of urine, but it shall suffice to tell briefly, that of the meat and drink together concocted in the stomach is made rude blood : (if I may so call it) which rude blood is wrought again, and made more perfecter in the liver : and thirdly yet more purified in the hollow vein, where the urine is separate from it, as whey from milk, but yet may not exactly be called urine, till it come into the reins or kidneys, which draw it out of the hollow vein, by a certain naturall power resting in them. And then doth the reins or kidneys alter it perfectly into urine, as the coldnes of the ground turneth air into water. But you must take this comparison or similitude to be spoken of the alteration it self, and not of the cause.

Now when Urine is thus made like to that fashion of water (as I said) then as the water passeth forth from his first place, by issues outward, so doth the urine descend from the reins by certain veins (as it were) called Water pipes, and runneth into the bladder, from whence at due times it is expelled forth, if the way be not let. So that you may compare the reins to the head of a conduit, the water pipes, to the conduit pipes, the bladder to the conduit, and the shaft to the rock of the conduit.

And

And further as the water doth declare by taste and colour the qualities of the earth, or veins of mettall, whereby it runneth, and from whence it commeth, so the urine by colour, and other wayes, declareth of what sort the places that it cometh thorow, and humors that it commeth from are affected.

And yet not only serveth for this, but also as the water, though it depart from the earth as superfluous in that place, yet in other places and to other purposes it is greatly profitable. So the urine, though it be expelled as a superfluous excrement, yet beside the commodity of judgement, which it giveth of the parts that it cometh from, it doth also serve for divers uses in medicine, and other good commodities: Of both which, I will anon orderly write, after I have declared certain things appertaining to the due judgement of it.

The Fudictall of Urine.

*Of the Instrument and parts by which
Urine is engendred and passeth, mark
this Figure following.*

A. Is the li-
ver.

B. The hol-
low vein

C. Veins by
which the
reins do draw
the urine, and
therefore be
called suck-
ing veins.

D. The reins.

E. The wa-
ter Pipes.

F. Is the
Bladder.

G. The spout
of the yard.

*All the other
parts beside, ap-
pertain to Gene-
ration and seed.*



CHAP. III.

*What Urine is, and what tokens it
giveth in generall.*

YOU have heard now how urine is ingendred, from whence it cometh, and by what places it passeth, which things all, to the intent that you may the better keep in minde, you shall note this short definition.

Urine is the superfluity or wheyie substance of the blood into a hollow vein, conveyed by the reins and water pipes, into the bladder. The definition of urine. So that hereby you may plainly perceive, that if the blood be pure and clean, and none other grief in the reins, Water-pipes, Bladder, nor Shaft, then shall the urine so declare it, being also perfect and pure in substance and colour, and all other tokens according to the same. But if there bee any grief in any of those parts, or the blood corrupt by any means, then shall the urine declare certain tokens of the same, as I shall anon particularly expresse.

But first it shall be necessary to instruct you of the vessel place, and time, meet to judge urine, and of the manner of receiving it.

CHAP,

C H A P. I I I I.

*Of the form of the Urinall, and of the place
and time meet to judge urine, and how
it should be received.*

The order
to receive
urine.

THat urine should be kept to see, which is first made after midnight commonly, or namely when the patient hath slept long: but you must take heed whether the patient be man or woman, that they make not their urine in another vessel first (as many use to do) and then pour it into the urinall when it is settled, for that causeth much deceit and error in the judgement of it. And if that the Patient cannot well make it in the urinall, either by weaknesse, or any other cause, then let them make it in another vessel; but see that it be clean and dry; and as soon as the water is made, pour it forth presently into the Urinall altogether, and leave no part of it out, as some curious folk do use to put the clear part only into the urinall and cast away the dregs, as though it stood not with their modesty to bring such foul gear to the Physitian, others of such like foolish mind. Pour it therefore in wholly and let not the urinall stand open, namely in a dusty place, but stop it close with a glove or other

The Judiciall of Urine.

II

other leather, and not with cloth, paper, nor hay, and let it be brought to the Physitian within six hours at the furthest, for after that time it cannot well be judged.

Now as touching the Urinall, it should be The Urinal.
of pure cleer glasse, not thick, nor green in colour, without blots or spots in it, not flat in the bottome, nor too wide in the neck, but widest in the middle, and narrow still toward both the ends, like the fashion commonly of an egg, or of a very bladder being measurably blown (for the Vrinall should represent the bladder of a man) and so shall every thing be seen in his due place and colour. If neither the grossenes of the Vrinall neither the colour, nor spots shall let the true sight of the colour and substance of the urine, and the contents of it: neither the deform fashion of the urinall shall alter the regions or rooms of the urine.

Likewise concerning the place meet to The place
behold urines, you must look that it be neither too dark, so that your sight should not discern perfectly, either the colour, substance or contents, for lack of light: neither yet that your sight be likewise deceived, if the place be too light, as in open light or beams of the sun.

Besides this also you must mark the time The time.
due

due to behold urines, but because there can no one time be assigned certain and exact to judge all parts of it, I will briefly shew the order of the things to be considered in their time.

First, when the urine is made, while it is yet somewhat hot, you shall consider the colour of it: for that may best be discerned then; and likewise the thickness of the substance of it, which if it be mean, shall then be best seen. All other things, as the bubbles and the contents shall be best judged somewhat after, when the urine is somewhat cooled, and they be duly settled in their proper places.

CHAP. V.

How many things are to be considered in Urine.

NOW leaving this as a brief instruction of the generation of the Water or Urine, and of the manner of receiving it in vessels due, with time and place meet to consider it. I will particuallly declare how many things are to be considered in it, which are commonly named four, that is the Substance, the Colour, the Quantity, and the Contents; and

Four things
to be con-
sidered in
Urine, viz.
Substance,
Colour,
Quantitie,
Contents.

and the Savour thereto may be added as the fift; to the which fift, if you shall joyn stableness and order, as two accidents common to the first four things, (but yet no lesse to be considered then they) then shall you judge the more certainly.

Stableness is called, when the urine continueth certain daies together of one sort. And if it alter every day, then is that called unstableness or changeableness, to which thing order doth appertain: For order is the following of one thing after another, as black coloured urine after white, green or pale. I mean not, because that so it ought to follow, but only that you must observe how it doth follow. For black Urine doth not signifie the same if it follow after green urine, as it doth if it follow after white urine: so that the order ought also to be marked.

Stableness.
Unstability.
Order.

But now to return to the four first things.

Substance is called in urine, the urine it self, in respect of the thickness or thinness of it: So that there are 3. sorts of substance in urine: thick, thin, and mean.

Substance.
Three sorts of substance in urine.

Thin substance is called, when you may perceive well the joynts of your fingers through the urine. And contrariwise it is called thick, when you cannot well see your fingers

Thin.
Thick.

Mean Colours.

fingers through it: and that is in the middle between extream thick and extream thin, is called, mean.

Colours are divers, but the principall are these six, white, pale, flaxen, yellow, red, and black. And all the other colours are contained under these six.

Light white
as Chrystallie,
snowie.

As under white, are contained clear as chrystall, white as snow, and pure as water, which three are light whites.

Waterie.

Dark white
as milke-white,
horny gray, pale,
flaxen, yellow.

Then are there other three more darker, as milk white, cleer like horn, and grey.

Light saffron,
saffron colour.

Claret.

Red.

Crimson.

Purple.

Blew.

Green.

After white, followeth pale colour, and then flaxen, after it followeth pale, and then yellow, which may be called golden, for it is the colour of pure gold.

After it followeth light saffron, and then saffron, then claret colour, and then red, after it crimson, and then purple, and then blue.

Then is there green of divers kinds, as light green, green as grasse, stark green, and dark green.

There are also oil colours (that is, popin-gay green) of three sorts: as of green, light oily, stark oily, and dark oily.

Oylie.

Ash colour.

Black.

After these is there Ash colour like unto lead; and after it, as last of all cometh black. And these be the chief colours.

Now

Now as touching quantity, it is also in three sorts; much, little, and mean.

Then it is called much quantity, when it ^{Quantity.} exceedeth the measure of a mans drinking. ^{Much.}

And then is it called little, when a man ^{Little.} pisseth lesse then he drinketh.

And that is mean, when a mans pissing and ^{Mean.} his drinking is of like quantity. All this must be considered by due proportion.

The contents are all things in the water, ^{Contents.} that be of another matter and substance particularly, then is the urine: as the sediment

or ground, the sublation or swim, and the ^{Sediment.} cloud. ^{Sublation.}

To these are added other dif-form ^{Cloud.} contents, like hairs, like huskes, like bran, and such other. And also the crown of the ^{Crown.}

urine, with the bubbles, and other things swimming on the top of it.

For the better understanding of these contents, you must note that the whole urine from the top to the bottome, is divided commonly into three rooms or regions.

The lowermost is the region of the ground ^{Four rooms} or sediment: so that the grounds or sedi- ^{or Regions.} ments are the contents that occupie the ^{Ground or} lowermost region. Or yet more properly, ^{Sediment.} the sediment is called a certain substance of grosser matter then is the urine, like to a quantity of very watery flegm, which fleeteth

a little above the bottome of the urine : But if it be so light, that it swim in the middle region of the urine, then is it called the sublimation or swim.

Sublimation or Swim.

Cloud.

Another division of the three Regions.

And if it bee yet more lighter, so that it doth fleet in the highest part of the urine, then it is called a cloud : whereby you may perceive that the ground, the swim, and the cloud are but one thing in substance, and differ onely by lightness and height, and taketh his name according to the region that it occupieth. But yet again note, that every one of the 3. regions, is farther devided into other parts also ; whereby you may know exactly, how far all contents differ from the just room of their region ; so that the whole urine must be divided into eleven just parts, of which the nether region occupieth four, the fift is the void room between that and the middle region, which containeth 3. more, that is to say, the sixt, seventh, and eight. And then the ninth is a void room between the middle region and the highest, which highest region, containeth the other two parts that remain, that is the tenth and the eleventh, as this Figure sheweth which hereafter followeth.

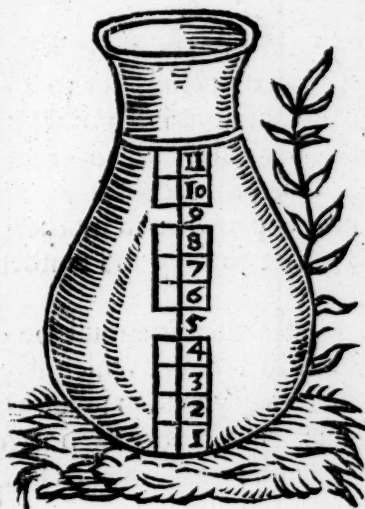
Above

Above these 3. regions, about the very brink of the urine, you may see a certain ring as it were, going about, and that is cald the crown.

Highest of all things in the urine are the bubbles, which either go about with the ring only, or else fleet in the middle of the urine onely, or else both. Yea sometime they cover all the whole top of the urine.

Beside these, there is oftentimes as it were flotes or fattiness on the top, and sometime certain spots only, which are like to drops of oil. And these commonly are the whole contents. For as for gravell or stone, or any like thing is contained under the name of d f form contents.

You shall also understand, that in the contents must the substance, the quantity and colour bee observed.



Crown.

Bubbles.

Fattiness.

Substance. The Substance is either equall or unequall.

Equall. Equal Substance is called, when the ground swim, or cloud, (for to them appertaineth this consideration) is not rattered and dispersed, but justly knit together.

Unequall. Unequall is contrary, when it is thinner in one part then in another, or flittered out, and not joyntly and uniformly joyned together.

Quantitie. The quantity must be considered in respect to a mean, which if you know well, then may you soon judge that to bee overmuch, that is more then it: and that to be too little, that is lesse then it: But this mean quantity must you learn of a perfect whole water, and best by the teaching of some good Physitian.

Of colours I have spoken before sufficiently for their varietie.

CHAP. VI.

What a perfect Urine is, and also how many wayes all parts of the Urine may be altered in a healthful man.

NOW that you know the difference of such things that ought to be considered

red in urine, before you shal learn by consideration of them, to judge of the person that made it, how he is disposed in his body : you must first know how many waies the parts of the urine may bee changed in a healthfull man. For the better understanding of which thing, and of all that shall be said hereafter, I will first define what a perfect whole urine is, which as it betokeneth no grief in it self, so it is a true rule to examine all other urines by that, which are not whole, but declare in them some grief.

A perfect whole urine is mean in substance and in quantity, and in colour pale, or party saffron, with a white ground, duely knit and stable, without bubbles and other evill contents.

A perfect whole urine
Galen c. 12.
Crisib.

So that this perfect whole urine declareth the difference of all other urines ; For every urine the more it agreeth with this, the better it is : and the more it differeth from this, the worse it is, as I shall anon particularly declare.

And here you must mark, that this perfect whole urine is not only taken of a perfect whole man, but also of the lustiest time of mans age, that is at thirty yeers : or more largely, between twenty five and thirty five. For in every age doth the urine alter, as you shal hear by and by.

The difference of Urine by age in men.

Children.

Galen 2.
presag. Hip-
poc. 13.Young
men.

Men.

Age.

THE Urine of children differeth but little in colour from pale, or light saffron, and in substance it somewhat exceedeth in thicknesse the substance of yong mens urine, and hath much ground in it. And the more they do grow in age, the higher waxeth the colour, the substance the thinner, and the less is the ground. And therefore when age is most freshest, the colour is pale (so that the urine of flourishing youth or perfect manhood, is pale or light saffron) and there resteth, and goeth no higher, and the ground of it is mean. But now after that time the more age increaseth and youth decayeth, the more the colour changeth from pale toward white, and the ground waxeth lesser and darker: so that the urine of old men is thin and white, with little ground, inclining unto cruditie.

Of the Urine of Women by age.

Women.

THE Urine of women which are temperate in health and in their flourishing youth, doth decline somewhat from pale and light saffron toward white, and the substance

stance is in manner thin, but it hath more ground then mens urine; now all they that be under this flourishing age, the younger they be, the whiter coloured is their urine, and the more ground it hath; and if they be elder, the more aged they are, the whiter also is their urine, but the ground is ever less and lesse. And this you may see how both diversity of age, and diversitie also of kind or sexe, causeth alteration in urine, without change of health; for you must understand all these ages with perfect health.

Young women.

Aged women.

The diversity of Urines, according to the times of the year.

EVEN as the diversity of ages alters urine, so doth the times of the year. For the more that the spring time draws toward heat the more the urine gathereth high colour, departing from pale and flaxen, toward pale and light saffron: and the inequality of substance changeth into a due equality according to nature, and the ground doth waxe thinner, and the quantity is more in respect to that is drunk: so that about the midst of the spring they return to a mean.

Spring.

In the beginning of Summer, the colour appeareth pale and light saffron, and the substance

Summer.

stance mean, the ground white, duly knit and stable, but yet thinner then a mean ground. And the more that the Summer proceedeth and draweth to the highest, the lesser is the quantity of urine, in comparison to the drink and the ground, changeth from his naturall whiteness to a palish colour and is much lesser and thinner. And this thinnesse glystereth withall, and inclineth toward golden and saffron colour.

Harvest.

When Harvest commeth, then the colours do return to a mean again : but the thinnesse and brightnesse remaineth still ; the ground also is still obscure and little, but yet it is white, duely knit and stable. And as Harvest goeth forward, so the urine returneth to a mean in all things.

In the middle of winter and thereabout, the urine keepeth due quantitie, but the colour inclineth toward white, and the ground is over great, but in all other points it is mean.

Winter.

And as Winter goeth on, the substance of urine appeareth divers, and the colour white, the quantity greater in respect to the drink, and the contents greater and unconcoct ; but toward the spring time they return towards a mean, as I have before said.

Yet beside these, also diversity of countries

tries causeth diversity of urine, even by the same reasons as doth the times of the year. For countries that be temperate exactly, make urine like unto the spring time. And those countries that be hot and dry make urine like unto summer. And contrariwise, cold and moist alter water, as doth winter. But countries that are drie and distempered between heat and cold, make urine like harvest.

Countries
alter urine.

Also meats and drinks, and order of diet, causeth urine to alter, and medicines also, as not only experience teacheth, but also *Hippocrates* witnesseth in the sixt Book of his *Epidemies*, (or raining sicknesses) in the fift part and the fifteenth sentence, as for example: Those meats that are light of concoction and good in substance, cause good and temperate urine with pure contents: but contrary meats cause discoloured urine, and thin, with strange contents.

Meats
drinks and
medicines.

Meats of
light con-
coction.

Meats that will not concoct, make lesser contents, and divers in substance. Evil meats cause greater contents, and in nothing duly formed. And as the quality of meats doth alter urine, so doth the quantity also. For if a man have eaten much, and not concocted it, his urine shall be thin and white, and sometime without ground. But if this crudity

Meats of
hard con-
coction.

Drinking
of wine.

crudity (or rawness in stomach) continue long, the urine will become divers in substance, and in contents.

Also wine drunk abundantly causeth alteration in urine.

Fasting
long.

But now contrariwise, if a man doe fast long, his urine will appear fiery and saffron coloured, and thin with lesser ground.

Suffering of
famine.

But if a man suffer famine, and do not nourish, his water shall be thin and white, with a certain glistering, and without ground.

Labour.

Moreover, exercise and rest changeth urine: for through excessive labour, the urine changeth from light saffron, and at length becommeth saffron coloured, with little ground, thin, and higher coloured then it should be. And some time there fleereth on the top a certain fattness, specially after overmuch wearinesse.

Rest.

But idleness and rest doth contrariwise cause white urine, with greater and grosser ground.

Sleep.
Watching.

Furthermore sleep, and watching, if they exceed measure, they alter urine; but there is a difference between both sleepe and watching comming of sickness, and them both when they be taken willingly in health. For if that sickness cause overmuch sleep, then

then is the urine whitish, with substance either fully thick, or but partly thin, and the contents many and undigest.

But if that such sleep come naturally the *Naturall* urine is not so white, but rather flaxen, and *sleep.* the substance mean, with greater and well concert contents.

And likewise they that have watched *Voluntary* purposedly, and not by reason of sickness, *sleep.* their urine is but little changed. But if they watch for any sickly cause, their urine will *Watch in* change but little at the beginning: but with *sickness.* continuance the contents will be dispersed, and at the last clean wasted, and the substance of the urine waxeth thinner and thinner, by little and little, and the colour inclineth either to white and watery, or unto golden saffron, oylie, or black, according as the cause is that maketh it so to change.

Of alteration by complexion, I will write in the next Chapter.

Now have you heard as touching alteration of urine in health, according to diversity of ages, both in men and women, times of the year, countries, meats and drinks, labour, rest, sleep, and watch: so that you must have regard to these in all judgments both in health and in sickness. For if these be not diligently marked, they may
cause

cause great error, as you may well consider.

What is to
be considered
in urine

First therefore, in every urine you must consider, whether it be a mans or a womans, and what age he or shee is of, then what time of the yeer it is, and what country, what meats and drinks the person used; and likewise of labour and rest, sleep and watch: And then must you consider how every one of these doth alter urine: so that if the altering of them from that healthfull urine (whereof I spake in the beginning of this Chapter) be but such as one of those foresaid things would cause, then may it not be judged to come of any disease, as for example. High coloured water in summer (so that it pass not saffron colour) or white coloured water in winter, should rather be reckoned to come of the time of the yeer, then of any sickness: and likewise of other things.

CHAP. VII.

*What be the generall qualities that alter
the parts of Urine.*

BEfore I treat of the signification of the parts of Urine, I think it good to instruct you

you of the generall qualities which cause all alterations in urine : whereby you shall perceive not only what every urine doth betoken (as I shall anon set forth) but also if you mark well this Chapter, you shall see the cause why every urine doth so signifie.

You shall understand therefore, that there be four chief and only qualities, whereof all things that are both in the Sea and Earth are made : as man and beast, fish and fowl, trees, herbs, stones, and mettrals. These four qualities are heat, cold, moistness and driness : and these four continuing duly tempered (as nature ordered them first in every perfect body) be the cause of continuall health. But if they bee altered wrongly, then doe they cause diseases diversity, according to the diversitie of the alterations : And as they doe cause diseases, so they change the colour, substance, and other parts of the urine, whereby wee may conjecture the cause of the disease; and so consequently the disease it self, though sometime it declareth the disease it self, and not the cause thereof.

But now to come to the matter meetest for this time, you shall mark that two of these four qualities are named Passive, and they cause but small alteration in comparison. Passive and active qualities.

son. The other two are called Active, and they cause great alteration.

The Active qualities are heat and cold, and the Passive qualities are driness and moistness.

Moistness. When Moistness therefore exceedeth alone, it dulleth the naturall colour of urine, thicketh and ingrosseth the substance, and increaseth the quantitie. And as the overpart of it above waxeth rough and troubled, so the ground increaseth and continueth raw and unconcoct.

Dryness. But dryness doth diminish the quantity of urine, and also the contents: It maketh it thin in substance, cleer and bright, and causeth mean colour, and the ground appeareth grosser.

Heat. Likewise heat, if it exceed measure but little, it maketh pale and light saffron colour in the urine. But if heat exceed greatly, it causeth golden and saffron colour, with mean substance, and a little brightness; the ground is mean, in respect to the quantity of urine, but it declineth from the due whiteness toward saffron colour.

Cold. But cold on the other side maketh urine turn to white colour, and changeth the substance from a mean. And if the cold increase, the urine will alter from mean substance

stance, and therefore consequently will bee either thin or grosse. If it be thin or unpure, the ground shall be either obscure and little, or much, and that divers and uncoct.

And this is the working of these four qualities when they exceed alone.

But and if two of them exceed together, there may result of that sort four other distemperances; as hot and dry, hot and moist, cold and dry, and cold and moist. Now Compound distemperatures of qualities, what alterations these and every one of them doth cause the urine, you may easily conjecture, if you keep in mind that which I said of the four simple qualities, and so adde together the alterations.

And this must you remember therewith, that where they both agree in any alteration, they cause that alteration to bee the greater: and where they be contrary, they cause the alteration to be nearer to a mean; howbeit somewhat to help you, take this brief declaration.

As a temperate man doth make that perfect urine, written of before, (*in Chap. 6.*) so A temperate man. the urine of a sanguine man (which is hot and moist) shall be yellow, or light saffron coloured, by the reason of the heat, and somewhat grosse, by reason of the moisture.

The Judiciall of Urine.

A cholerick
man.

In a cholerick man (being hot and dry) the urine shall be in colour as in a sanguine man, but in substance thin, by reason of the dryness.

A melan-
colike man.

The urine of a melancholy man (whose nature is cold and dry) shall be white through the cold, and cleer for the dryness.

A flegma-
tick man.

The flegmatick man (which is cold and moist) maketh urine white through cold, and thick by the moisture, for as heat and cold altereth the colours, so dryness and moisture changeth the substance. Now if you have remembred all that I have written before, then shall you be the meeter and better able a great deal to perceive the reasons of the tokens which urine doth give. And so shall your knowledge be the more certain, if you know not only the thing, but also the cause of it. Now therefore will I write of the signification of the parts of urine, particularly, that you may perceive that first, and chief commoditie of urine which it worketh for mans health.

CHAP. VIII.

*The significations of the parts of
Urine particularly.*

ITold you in the sixt Chapter of this Book what urine was most perfect, sound, and healthfull of all other. And I said, that it was the rule and tryall to examine all other urines by, so that the neerer that any urine was to it, the better it was ; and the further that it declineth from it, the worse it is. This I said, should be as a generall rule, which thing to be true in healthful men, you may perceive by that I have written already. And that it is also true in sick men. *Hypocrates* witnesseth, saying, *That Urine is best, whose ground is white, duly knit and stable, all the time that the sickness prevaieth.* But *Galen* to supply that that is understood in this saying, and so to make it perfect, addeth thereto, *That it must be of colour partie golden or pale, and of a mean substance between thick and thin.* And also in these things is required stableness, to make it a perfect Urine ; for that which is unstable in any part, in that it is not perfect.

Here were a place to speake of the difference of this changeableness or unstableness ;

for there is one sort called ordinary, and another called unordinarie, and of both these are there divers differences. But because they depend of an exacter judgement then unlearned men can well attain unto, I overpass them for this time, and will declare the other differences of urine, whereby it altereth from this mean urine, in all parts particularly.

Substance
of urine.

And first I will begin with the substance of urine, the which (as I said before) is of three kindes, thick, thin, and mean.

Mean.

A mean urine is that, that is in the middle between extream thick, and extream thin. And as it is mean between them in substance, so is it mean in signification, for it doth betoken (of it self) only good temperance and health. But the other two betoken distemperance and default of concoction, and that diversly, according to the diversity of the causes of them, as you shall now consequently hear.

Thin urine.

First to speak of thin urine, either it doth still so continue thin, as it was first made, or else it doth shortly waxe thick and troubled. That that doth continue still thin doth betoken lack of concoction, and so doth the other also; but yet this that continueth thin betokeneth more lack of concoction, for it betokeneth that nature hath not yet begun to concoct. And therefore is that water, a sign of extream crudity or rawness in nature. But that that waxeth thick, after

ter it beginneth to cool, though it betoken lack of concoction, yet doth it declare that nature hath begun to concoct alreadie, notwithstanding it is an evill urine, for it signifieth that nature hath need not only of great strength to perform that concoction which she hath begun; but also that there is required long time to the performance of the same. For the which cause, *Galien* calleth this, *Of all Urines the worst*.

Thus have you heard touching crudity and concoction, what thin urine doth signifie, so that all thin urine betokeneth crudity. And beside that doth further betoken (as witnesseth *Hypocrates*) *gatherings or apostumations in the nether parts of the bodie*, namely, *if it continue so very long, and the patient escape death*.

Furthermore, if such thin urine have with it a light whiteness, it is a very evill sign. For if it be in a burning ague, it is a token of freshness. But if the patient be fransick alreadie, and the urine doth so continue, it doth most commonly betoken death. And if he escape death (the which is seldome seen) then shall he be long sick, and escape hardly.

Thin and white.

Thin urine also betokeneth divers other things: as the stopping of the reins, and of the water veins. And likewise, if a man have had much bleeding, or laxe, or pissing, his urine will be white and thin, and almost without ground: Like manner in old

The Iudiciall of Urine.

age, and long weakness of sickness. Also in young children if it continue long, it is a deadly sign.

Yet thin urine doth sometime betoken the end of sickness and recovery of health: as in Agues (namely quotidian) if at the beginning of them and so after, the urine did appear thick and troubled, and especially if the colour amend therewith.

Thin and
flaxen.

And if it be thin in substance, and of flaxen colour, then is it better then thin and white: for because the colour is better though the substance bee all one; so that though it betoken some weakness and lack of concoction, yet not so much as doth the other, for the colour is meanly concoct: that is to say, naturall heat is meanly increased.

Thin and
golden.

But if it be thin and golden, it is yet more better then thin and flaxen: for the colour is more exact and this betokeneth concoction half compleat, for that which it lacketh in substance, it hath in colour.

Thin and
saffron.

After this is there thin and saffron coloured, which betokeneth first lack of concoction, and beside that default of nourishment, as in a young man that fasteth long: And sometime it betokeneth that excess of heat in the inner parts of the body, doth cause cholerick humours to abound, as in the fever tertian.

tertian. Beside all this, it betokeneth thought, carefulness, and watching, and also overmuch labour, and taking of heat in the Sun.

And thus have you heard the significations of thin urine, both alone, and also with such colours as it can be coupled.

Now shall you hear what thick urine doth betoken, both alone, and also with such divers colours, as it may be coupled.

Thick urine (which is, so I mean, when it is first made) either it doth continue still thick, or else it doth settle, and waxe cleare. If it continue still thick, it betokeneth that that disturbance which was in the blood, that is to say, the rage of sicknesse doth still continue strongly: and that naturall strength is but weak. This urine is not so good as that which doth settle and waxe cleare. For that doth betoken that the disease shall shortly be overcome: howbeit there remaineth yet somewhat of that distemperate trouble in the blood: yet nature hath the over-hand and expelleth the matter of the grief, and therefore is such a urine called good, but yet it betokeneth some lack of concoction, though not so much as that which continueth troubled and thick still.

Thick.

Also thick urine (if it be exceeding thick) doth betoken death, as *Hypocrates* saith,

And the urine that is thick and troubled, like beasts urine, doth betoken head ach, either present already, or shortly after to come. If thick urine appeare in an ague, where thin urine went before, it betokeneth that the sickness will abate straightwaies, for it declareth that nature hath overcome the matter of the sickness: but if it appear thick at the beginning of the ague, and do not waxe thin in proceſs of time, it betokeneth plenty of matter, and weaknes of nature; so that there is fear lest nature should be overcome, except the colour do amend.

Thick and
white.

Thick urine also betokeneth opennesse of the water pipes and reins. And if it bee thick and white, it betokeneth great plenty of raw humours, and sundry kinds of flegm to be gathered in the bodie: and betokeneth also (namely if it be much) that those gatherings, which might be looked for in fore agues shall not ensue, for the matter which should cause them departeth out by urine: but the whiteness of this urine is bright as snow. For if it be somewhat darker like the whiteness of milk, it is a token of the stone, either in the bladder or reins, namely, if such urine chance in the end and amending of sickness.

But if the colour of it be grey, it betokeneth
not

not only plenty of matter in the body, but also that the whole body is possessed with a dangerous sickness, whereof oftentimes it chanceth the patient to break out with blisters and heat in his skin.

Next after this followeth thick claret colour (for flaxen, yellow, nor saffron colour doth not agree with thick urine) and it doth signifye that the disease shall continue long, specially if the ground of it be also of claret colour. But yet this disease without perill of death. Thick and claret.

Thick urine, if it be red coloured, doth betoken abundance of blood, as is seen in continuall Agues, and in all perillous Agues, as witnesseth *Theophylus*. If this water come by little and little, it is an evill token, for it doth alwaies declare danger. Thick and red.

And if that sort of urine (in such Agues) do waxe troubled, so that there come with it deafnesse of hearing, and ach of the head, with pain in the neck and in the sides of the belly, it betokeneth that the Patient shall have the falling evill within a seven night.

And if a thick urine have a crimson colour, If it bee burning Agues, and the Patient then have the headach, it betokeneth that a chief criticall sign either is then present, or else nigh at hand. Thick and crimson.

But

Thick and
blew.

But if the urine be thick and blew coloured, it signifieth diversly, as the persons are that made it. For in them that are in way of recovery, it betokeneth that they shall escape their grief. It signifieth also pain in the water-pipes, or else that the party hath runn much.

And if it appear such in old men, and that continue long, it declareth not only that the bladder is infected with evill humours, but commonly also that he shall be rid of them. But if it come after the grief of the stone, it declareth that the grief shall be turned into the strangurie.

Thick and
green.

Thick urine and green, namely in Agues is a token of the yellow Jawnders, either present, or ready to come.

Thick and
ash coloured.

Thick urine and ash coloured, if it appear in Agues and do not settle, it is a sign of madnesse, But in the burning Ague, it betokeneth that the strangurie will come shortly.

Thick and
black.

But if a black colour appear in thick urine, it betokeneth sometime well, as in the end of the Fever Quarten, and of melancholike madnesse, for it betokeneth that the melancholike matter, which caused the diseases, doth avoid out.

But sometimes it is an evill token, for it signifieth that either the blood is burned through

through exceeding heat, or else that naturall heat is clean quenched through deadly cold, and therefore is commonly called a deadly sign, namely in Sharp Agues, if it have an evill savour. And so meaneth *Galen*, when he saith, that he marked, *The thicker that a black water is, the worse it is*, and moreover, *That he never saw any escape, which made such Urine.*

And thus have you heard of the significations of thin and thick urine, with such colours as may be coupled therewith.

Now will I write a little of the colours alone, and of such tokens as come chiefly of them, rather then of the substance or any other part of the urine.

The colours of urine declare commonly, Colours of urine. how heat and cold do reign in the body, so that the whiter the urine is, the greater is the cold, and natural heat lesse; and the higher coloured that the urine is, the greater is the heat.

But to speak particularly, that you may perceive it the better. If the urine be white, it is a sign that concoction faileth quite, and the lighter coloured, the worse.

Pale colour is better somewhat, though it also declare lack of naturall heat and strength.

And flaxen colour, though it betokeneth Flaxen. beginning

beginning of concoction, yet it is not perfect: howbeit it may be well taken, if all other signs be good.

Pale, light
safron.

Pale and light safron (as you have heard before) are the best colours and most temperate, which betoken exact concoction.

Golden
safron.

But golden and safron colour declare excess of heat.

Claret red.
Crimson
Purple.
Green oily.

Claret is next, and then red, after it crimson, and then purple, then green, and last of them is oily urine, which as they goe in order, so they declare greater and greater heat with increase, not only of the qualitie, but also of the matter containing the same.

Blew ash-
colour.

But now of the other side, blew urine, and ash colour, are tokens of excessive cold, sometime with matter, and sometime without; and so likewise of black urine, howbeit it cometh sometime of excess of heat.

White.

But how you may know the differences both of it and all the other, now will I shew in order, with the rest of their significations.

White urine, if it come in great quantity, in a whole man, it betokeneth much drinking of thin wine.

But if it be mean in quantity, with a due ground, it declareth cold distemperance of the liver. The urine doth appear white, with a dis-form and unconcocted ground, in them

that

that have the dropſie. But in old men, white urine is no great evill ſign, as you may perceive by that I ſaid before of Ages, how they alter urine. But in yong men, and ſuch as are of freſheſt age, it is a worſe ſign, and ſpecially if it have either no contents, or elſe evill contents. And if urine continue long time white without changing, it betokeneth painfull beating of the head, daſſelling of the eies, and giddineſs, and alſo the falling evill, lothſomneſs of good meats, and luſting ſometime after evill meats, greedie hunger, pain in limbs, and painfull moving of the ſinewes, and divers griefes of the head and reines, and alſo pain in the fundament, and great weakneſs by ſickneſs, for all theſe doe follow continually lack of concoction, either cold, or ſtopping of the urines and conduct, or tranſpoſing of the humours.

But the differences of theſe cannot eaſily bee known of every man, yet ſuch as are learned may gather certain diſtinctions of them by the accidents which follow diſeaſes.

Dark white colours, as milk white, white, white like horn, and grey, If they appear in the beginning of Agues, and in the increaſe of them, they doe betoken much pain. But

Milk white,
hornwhite,
gray.

in

in the decrease of Agues, they declare health especially if it come plentifully.

Pale, flaxen Pale urine and flaxen, do not lightly appear in Agues, except they be easie Agues, and short, as those which continue but one day, but if that it do follow after burning Agues, it declareth that they be fully dissolved.

Pale, saffron,

As for pale and light saffron, they are (as I said before) the best and most perfect colours, namely, in young men and fresh youth. But in old men, women and children (whose urine, as I have said, declineth toward white and pale) it doth betoken that their bodie is too hot, either by reason of their diet, or else of their exercise. But in as much as it is but mean excess, it declareth but small grief.

Golden saffron colour.

Golden and saffron coloured urine, if it be either somewhat thin, or very thick, either it hath no ground, or else very few, and dark contents. But in this they differ, that golden urine declareth excess of heat, and matter also, by reason of meats, sharp medicines, chasing of the blood through anger, heat of the bowels, or else heat of the time of the year.

• But saffron colour appeareth rather with default of matter, through some affection of the

the mind, watching, heat of the sun, labour, and such like things, which increase thin and yellow choller, and diminish naturall heat, so that the cause of this colour is choler it self, increased either in quantity, or else in qualitie. But in old men and women, and such other, there is some greater cause that occasioneth it, for it signifieth an Ague cometh of saffronly choler dispersed through the whole body; after which there followeth commonly giddiness, headach, bitterness of the mouth, lothsomeness of meat, thirstiness, Also in yong men, such urine is caused through much exercise, and use of hot meats.

Of Claret and red Urine.

Claret and red urine is coloured either of ^{Claret} the mixture of red choler, or else of the ^{urine.} corruption of blood; such urine oftentimes goeth before Agues. For when the blood doth so abound, that it cannot be duly laboured, nor can take no ayre, there is engendred a certain corruption, which as it is red of colour it self, so it causeth the urine to be red in colour if it be much, else it maketh only claret colour. But if it be exact red lik grain, it betokeneth that blood issueth into it, out of some veins nigh to the reins, which

which either are broken, or other waies opened. But how it may be known from whence it commeth, and how, there are many means to search, but because they are not light to perceive, I will reserve them for Physicians that are learned. This colour of it self is no great evill sign, namely in young men, for it betokeneth excess of blood, which may well bee born of them. But in old men it is a very evill sign, for it betokeneth either long sickness, or else death, sith nature is so weak that it cannot keep in her natural humour. And if that red colour, come of red choler, as it doth in young men, for the most part and not of blood (which thing a learned Physician may conjecture partly by the former diet, and other signs more) the accidents shal be the more troublous ; howbeit yet not so evill, as when it commeth of saffron or golden choler, for this causeth greater thirst, and more troublous sleep then the other.

Of Crimson colour.

Crimson
colour.

CRimson colour is a token that the good humours of the bodie are burned, and turned into red or black choler, which cause worse griefs then the other ; howbeit if it have

have a good ground, the grief is the more moderate: But if it have either no contents for a space, or else evill contents, and the urine appear like a thick myste, but somewhat glistering light, it is a sign that nature needeth such strength to recover her selfe to her own state, Notwithstanding such urine is caused sometime in whole folk, by reason of much labour, and long journeying, and then it hath some good signs therewith. But in them that have a sharp Ague, such crimson colour of urine doth betoken that corrupt blood doth abound, and that it doth putrefie, and turn into choler. And commonly they that make such urine, doe thirst much, and are dry in their mowth, and are troubled in their sleep, and feel sharp Agues, and are half-distract, and feel pain of the liver with coughing.

Howbeit, yet these signs may be sometimes as well good as bad, according as the colours do change to better or worse.

Of Purple Colour.

Purple colour declareth need of much strength before it can be altered to a good urine. Purple colour.

This urine is a sign of burning choler. And if it do continue very long, it is a token

of the yellow Jaunders, with abundance of gross and corrupt choller, gathered in the liver. And at the beginning there goeth with it some spices and grudgings of the Ague, with a little thirstines; but unless there bee discretion used in the diet of such a Patient, it may turn to a much worse disease.

Of Green Urines.

Green colour.

GREEN colour is an evill and a dangerous token, for it needeth not only long time, but also continual strength to bring it again to a good trade. The higher that this colour is, the more it declareth that choller exceedeth the other humours: which if it be any more burned, will cause black urine, of which I will anon speak. But if green colour come of wasting of the fat, then is it somewhat like to oylie colour, or popinjay green: but if it come of abundance of purplish colour, and through increase of his qualitie, then doth the colour incline more toward black, and glistereth with shadowie green, drawing very nigh unto black. After green choler followeth madness, parbreaking, and avoiding of choler, sometimes with matter, or else burned: and also continuall thirstines, and burning heat of the tongue, straight-

straightness about the stomach. And like other things. But if the patient continue strong, and the colour of the urine do waxe lighter, there is good hope, else there is great fear, least of the dryness and burning, there do follow contraction of the sinews, which will kill the patient.

Of Oylie Urine, or Popinjay Green.

OYlie Urine is of three sorts, as I said Oylie urine, in the fift Chapter, that is, light oylie, or popinjay stark oylie, and dark oylie. green.

Oylie urines are a token of unnatural heat, and the higher that the colour is, the greater is the heat. And also they betoken melting of the fat within a man, for of it are they so coloured. But at the beginning, when there is a little fat melted, the urine is light oylie. For if it look stark oylie, then it signifieth that the disease increaseth. But if it come once to dark oylie, then is the disease fore increased. *Hippocrates* in the seventh Book of his *Aphorisms* speaking of fatness in urine, saith thus: *Who so maketh urine with fatty stotes comming much and fast, they have sharp pains in the reins.*

Which sentence though it seem more to appertain to the contents then to the colour,

yet doth not onely *Galen*, but also *Aetius*, *Aetuarus*, and also another *Grecian*, (whose name I know not) expound it amongst colours: and by it declare the difference to know whether that waist or melting of fat be in the reins it self, or in other parts of the body. For if it come fast together, (as *Hippocrates* saith) then commeth it from the reins it self, and betokeneth the waisting to be in them. But if it come softly and increate by little and little, then doth it declare that the whole body is overcome with unnaturall heat, and that the fat of it doth waist: it doth betoken (as *Aet.* witnesseth) a waisting Ague, consuming the body.

Of blew Urine, Ash-colour, and Black.

Blew colour, Ash-colour, and Black, do differ only in lightness and darkness. For ash-colour is darker then blew: and black is darker then any of them both.

Blew colour.
Blew colour.

Blew colour sometime cometh of moderate melancholy, and then is the urine somewhat thin in substance. And sometime it cometh of great cold, and then it is thick in substance. And sometime it is a token of mortifying of some part. Yea, and sometime even of whole nature: namely, if the colour change to worse and worse, and there went before

before no token of concoction.

Ash coloured urine commeth of like Ash-colour. causes, and betokeneth like things. Howbeit it is so coloured many times, when the party that made it, hath been sore beaten and bruised. But in this you need not the help of urine, for you may see the wals and tokens of the stripes in his body.

Urine which is extream black, some- Black urine. time betokeneth extream heat, and sometime extream cold, the which both you may distinctly discerne, if you doe observe order of alteration in the colours of the urine that the patient made last before. For if his urine before were green, or like thereto, then doth the black urine which follows it, betoken extream heat. But if it were last before blew or ash coloured, then doth it signifie extream cold. This black colour though it be commonly an evill and deadly sign, as I said before, (speaking of thick urine and black) yet sometime it is a good token.

For in all diseases lightly that come of melancholy matter, it betokeneth that the matter doth avoid, and so the sicknes to end. And such urine doth appear many times after purgations or other meats and drinks which purge the spleene; namely, if a man do labour upon them, that was before diseased of the spleen.

Howbeit, sometime meats and drinks of like colour cause black urine, as *Galen* witnesseth, namely, after dark red wine, and *Allegant*.

But in moderate Agues, if such black urine doe appear, it is a token of death, except it be on some Criticall dayes. And likewise in sharp agues, especially if the favour be strong and stinking: unless it come of some grief of the bladder

Quantitie
of urine.

Let this suffice for this time, as touching colours. Now for the quantitie of urine, as when it is mean, it is a good token: so when it is either too much, or too little, it is an evill sign, except it come of such cause, (as I shewed before) that altereth urine in a healthfull man.

Much in a
whole body.

As first excessive quantitie of urine, cometh of much drinking of thin wine, as *Rennish* wine, and such like. But that shall you thus know: for the colour will be white-ly, and the substance thinner then a mean: the contents also will be divers, and not dully knit. Likewise if there be abundance of raw humours in a man unconcocted, and yet nature persevering strong, then is there great quantity of urine, and somewhat thin of substance, but not so white as the other, and the contents of this are better. Also

4. Aph. 3.

(as *Hippocrates* saith) much Urine made in
the

The Iudiciall of Urine.

51

the night, is a token of small sege; so that if any impediment let naturall sege, then will the quantity of urine be the greater. But in this as the colour is mean, so is the ground both greater and grosser, yet in healthfull folk may the urine, by another means also be greater then a mean, and that may be by medicines which provoke urine, but then is the colour more naturall then the last that I spake of, and the ground is thinner of substance, so that it is dark and scarcely seene, and then is there a certain glittering in the urine it self.

Now contrarie waies, and of contrary causes cometh small quantitie of urine. For it cometh sometime of lack of drinke, or dry meats, and then is the colour light saffron, with a smal ground, but yet somewhat gross. Also both meats and medicines that are clammy, and apt to stop the water-pipes, do cause little urine, but then is the ground also little and thin.

Little urine
in a whole
body.

Besides these, much sege causeth urine to be lesser, for if the one excrement be greater then nature would, the other must needs be lesse, if the body be healthful. In this urine, as you may partly know the cause of it by the knowledge of the excessive sege, so will the urine it self be thinner, and the ground very

The Judiciall of Urine.

thick, thin, and not duely knit. And thus many waies may this alteration appear in a healthfull body.

Much urine
in a sick bo-
dy.

Now in a sick person, much urine either betokeneth the dropfie, and then is it like water, with a raw and diverse ground, or else if it be white, thin, and without ground, then doth it betoken the pissing evill. And this urine (as witnesseth Galen in his first Book of Judicials) *is the worst of any other of like sort*, I mean which declareth lack of concoction, for it declareth the decay, yea I may say, the utter extinction, of two naturall powers, that is, the retentive power, and the alterative power also.

Diabete.

Much urine, in colour fierie, and light saffron, or of any like colour, is to be feared, namely, if it be coupled with evill contents; But if it be of crimson or purple colour, and so proceed, especially if no concoction went before it, then doth it encline to evill, and betokeneth a certain mortifying and wasting of the whole composition of the body.

But if much urine come in an Ague, namely toward the end, and that there went before it little urine, thick and ruddie, then is
4. Aph. 69. that a good token, as witnesseth *Hypocrates* for it betokeneth the Ague to be at an end. And this Urine will bee white and thin
mode-

moderately, and will have a mean ground.

Now little quantity of urine, with a grosse ground, and dully knit and unconcoct, is an evil token; for it betokeneth the weakness of the alterative power, which is notable to extenuate, concoct, neither alter the matter, and therefore doth it with much difficulty pass forth in such grossnes. Howbeit, if there follow after it a more thiner urine, with the ground well and dully knit, and stable, then is it without fear. For this latter urine (as you heard before) is a token that the cause of the other is overcome and vanquished.

Little urine
in a sick body.

This little quantity of urine cometh sometime in vehement Agues, and then is the violent heat, cause thereof. Sometime also it cometh of the stopping of the water-pipes, not only through clammy meats and drinks, but also of some disease or grief in them.

And this now shall suffice for an Introduction, as touching the substance, colours, and quantity of urine.

Should
be noted

It followeth next, to speak of the contents which so greatly help to the right judgement of urine, that Hippocrates (in his second book of Prognostications) doth by them only; yea, and that by one of them (I mean the ground) pronounce the judgement of

Contents.

Sediment. of a perfect urine; saying, *That that is the best Urine, which hath his sediment or ground, white, duly knit and stable, and that continually all the time of the sickness.*

Now seeing this great Clerk and Father of Physick, doth thus esteeme the ground, it shall not seeme unmeet, that I orderly doe write briefly of those principall things that are to be considered, as touching the contents; and first of all of the ground, which hath alteration (as you have heard) both in substance, colour, and quantitie.

But now as touching the substance? then is it only mean, when the third concoction in the veins is perfect. For the ground is the excrement (as you might say) of that third concoction, and is like in forme to matter, save that it is more duly knit together then is matter, and doth not smell so evill as it; or else you may liken it to thin fleam.

**Grosse
ground.**

This Ground is then grosse, when the veins are replenished with raw humors, Howbeit this grosseness or thickness is not alwayes an evill token; for sometime it is a sign that nature hath prevailed against the crude humours which caused diseases, and doth expell such superfluous excrements. And that shall you discern by the goodness, of the colour, and also if it come in the declining

clining of the sickness : for if it come at the beginning, either in the increase of the sickness, then are they to be suspected as evill ; especially if they bring with them evill colours.

A thin ground , being also pure, and so cleaving to the bottom of the Urinal, that it will not lightly rise, though the urinall be shaken, it is a token of great weakness of nature in the third concoction, and such a ground appeareth most in white and watric urine. Thin ground. Howbeit sometime a thin ground cometh by the reason that the raw humors are extenuate through naturall heat, which getting new strength, doth extenuate and disperse all grossuels of raw humors within the veins. For the propertie of heat, is to knit and bind together thin things, and to extenuate and disperse grosse and raw things.

Now as touching the colours of the ground, the perfect ground is neither exceeding white, neither yet pale, but mean between both, for if there appear any such excessive white, then is it some rag of phlegmatick matter, or else matter extreemly concocted, which commeth from some inward member being sore ; and that you may discern (as I said before) by the toughness, and by the savour. Colour of the ground. And

And if any man be desirous to know the cause why the ground is white of colour, let him remember, that the ground is the superfluous excrement of the blood being perfectly concocted in the veins. Now that the blood it self, when it is exactly concocted, is turned into a white, or at least, a party white colour, you may conjecture by the generation of milke, and also the seed of man, yea, and of matter, which all three are nothing else but blood, exactly concocted, save that matter cometh of evill blood.

Pale.
Flaxen.

And therefore whensoever the ground hath in it any other colour then white, it is no good token: As first, if it be pale and flaxen coloured, then it is swarved from his right and commendable colour. Howbeit, yet it may be born as but meanly evill, because that that colour cometh of small excess of choler.

low
Saffron.
Actuarius.

But if it be more higher coloured by choler, so that it be saffron coloured, then is it an evill token (as *Actuarius* saith) for it declareth that choler is excessively increased, either by the order of diet, or else by the corruption of blood, or some other wayes. Howbeit *Hippocrates* in his *Aphorisms*, seemeth to say the contrary; for he saith, That when the ground is so coloured

red

red of choler, especially if at the beginning of the sicknesse it were waterie to sight, then doth it betoken a quicke sicknesse; that is to say, as *Philothens* expoundeth it, a sicknesse, that will shortly be ended, and so it may justly be called a good sign. Notwithstanding as in this point it is a good token, in that it signifieth that the disease is nigh the end, so it may be called (as *Actuarius* calleth it) an evill sign, because it doth betoken a cholerick sicknesse, and that choler doth unnaturally abound.

And if this answer do not content you, (though it content *Antonius Musa*) than may you say more better (as I thinke) thus: That if the ground be at the beginning of the sickness coloured with choller, and so increase (as *Actuarius* seemeth to mean), then is it an evil token indeed, for it declareth both the abundance, and also the encrease of choler. But if the ground, at the beginning of a cholerick disease were warry, that is, white and thin, and after ward turn to saffron colour, which is the exact colour of choler: or else to a yellow colour (which is somewhat lesse cholerick) then is it a token that the cholerick matter, which before lay lurking in the body, doth now begin to avoid; and so the cause of sicknesse, thus

thus by nature expelled, health must needs follow.

As contrariwise, if after yellow or saffron colour it change unto whiter, and there be no certain token of concoction, then it is an evill sign, and a token of phrensie. Howbeit, if there be any token of certain concoction, then is the same a good sign, so that if you take heed, you may perceive here what a necessary thing it is to observe order in the alteration of urine, of which I have partly spoken before.

Claret colour.
Red.
Bloudie.

Now therefore to goe on. If the ground bee of claret colour, either red or blew, the token is not good. For these bloody colours come either of too much abundance of blood, or else by reason that the retentive power is so feeble, that it cannot keep in the good humors, but suffreth them to run out.

Claret red.

Claret colour and red, doe betoken a certain default of concoction in the veins, and that through the excess of red choler. But yet this default is but mean and without danger, seeing that the hurt is only by quantity, whereas some other do hurt both by quantitie and qualitie also.

Bloudie.

Bloodie grounds are altogether worse then red (though they be better then ashy-colour.

coloured, and black) for they betoken that the bloud is nothing duely wrought, especially if their quantitie be much, withall, for then the quantity of matter doth let the powers to work, which thing yet as it may be born, so it declareth need of long time to recover health.

But if this doe come through weakness of the powers in themselves, then is it an extreame evill sign: for it betokeneth that the powers are overcome with weariness in working, and be not able to keep in the good and profitable humors. Which thing re discern more exactly, you shall take artificiall conjectures by other circumstances, which give also tokens of judgement; namely, as by the age of the person, by his order of dyet, and such like.

Now to make an end with the other colours which are of a dark hew, as blew-ash-colour and black: These of all other are the worst, and most envious to nature, and the nearer they cleave to the bottome of the urinall, the worse they are.

These colours come of a black melancholy humour, being ingendred within the veins, or else coming from some other part into them: or else it betokeneth deadly mortifying. But sometimes it cometh of fore-

Blew.

Ash-colour.

Black.

fore bruiſing and ſtripes, and generally it cometh (namely the black) either of exceſſive cold or exceſſive heat.

And now for a concluſion, whatſoever I have ſaid of the ground, you ſhall underſtand the ſame to bee ſpoken of the ſwim, and the cloud; for they are in kinde but one thing, ſave that they differ in lightneſſe and heft, and therefore alſo in places. But the judgement of their ſubſtance and colour, is much after one rate, though ſome difference there be, as you ſhall hear hereafter.

Quantitie

And likewiſe of their quantity, which as it is then only commendable when it is mean, ſo if it be greater then a mean, it doth declare ſome alteration in man, though not alwayes extreainly evill, for ſometime it is a token of fattig, or growing to a corporatenefſe, and that it doth ſignifie, if none other evill ſign be coupled with it. For

Great.

Though the perſon feed much on nourishing meats, and that with reſt and an idle life, yet naturall heat appeareth ſo ſtrong, that ſhe can eaſily concoct ſuch meats. According to this ſaith *Galen* in his Iudicials, that the plenty of the ground in urine betokeneth certain and exact with concoction: And that as the body is repleat with crude humours, ſo it declareth that thoſe ſame be
in

in expelling out at that present time. And for this cause (saith he) in all children commonly, and in men also which feed much, or bee of some other cause replete with humors, their urine hath a great ground.

Also oftentimes it chanceth the pores of the skin to be stopped, so that such excrements as were wont to pass out by them, are inforced to seek a new passage, which they find most readiest by the urine, and thereof are the contents, and namely the ground, oftentimes encreased. And all these waies chance in health. But in sickness, it chanceth many and grosse superfluities do appear in the urine, as often as the naturall powers, namely, the alterative or concoctive power being weakened, such crude humours pass out undigested.

So doth it chance (as witnesseth *Alexander Trallianus*) *That the urine of them which have the Collick, is flegmatick and hath a great ground.* But if the contents be either great, or gross in the beginning, or in the augmenting of sickness, (namely if the Patient have any notable Ague) it argueth abundance of humours, to the concoction of the which there needeth both strength of naturall powers, with time and good speed.

Tral. 2. cap. 33.

Little Con-
tents.

Gal. 2. pref.
Hip. 26.

Urine with-
out ground.

And now contrary wayes must you judge of the smalness of the contents, for they be caused either of great labour, long fasting, stopping, or obstruction of the veins, and such like parts, or else of slacknesse of concoction. And (as *Galen* saith) when the body is replete with crude and raw humours, then is the ground great, but if the body be replenished with cholerick humors, then is there in the urine either little ground or none at all ; but in such case it is well, if there be any sublimation or swim.

Now seemeth the place most meet to speak of such urines as have no ground at all, nor other orderly content, and that will I doe by the order of the colours of the urine, according as *Actuarius* proceedeth.

The urine that is very white, and exceeding thin, and so lacketh the ground, doth betoken either some notable obstruction, either immoderate cold, or else cruditie and lack of concoction. And as these tokens may be greater or lesser, so shall the things which they betoken bee judged in like rate, either more, or lesser.

But if the urine bee pale coloured, or flaxen, and then lacketh contents, as it doth declare lesser obstruction, so it doth signifie as great cruditie, as the other before.

And

And so shall you judge of urine that is yellow or flaxen coloured. For in them it appeareth, that naturall heat doth prevail. Notwithstanding such things (I mean the default of the ground with those colours) may chance (as often they doe) through vehement pain, immoderate labour, long watching, and also default of matter.

But such urines as be higher coloured then these that I have named, by their colours they declare the qualities of the humours which doe prevail: and also betoken a certain putrefaction, and cruditie in the veins.

It chanceth also sometimes, that some gathering sore being in some of the principall members, by his unnaturall heat withdraw thither the matter (even as it were by cupping) and so doth cause the urine to have no ground. And though, indeed, it is never a good token to lack the ground in a urine, yet it is lesse to be complained of, if the colour and substance draw nigh to a mean; for in such a case it betokeneth, that though nature be somewhat slack, yet will shee shortly gather strength, so that there shall appear a ground in the urine.

Now to shew you the reason, why it chanceth no ground to appear in the urine: First,

in case of cruditie, when there wanteth perfect concoction, there must needs want also the contents in the urine; for they are the excrements (as you might say) and the superfluities of the third concoction. Likewise though concoction be perfect enough, yet may there want the contents, if there be any notable obstruction or stopping of the veins, namely, seeing the contents are somewhat gross of substance, and therefore unable to pass, if the way be any thing stoppt.

After the same sort shall you judge of long fasting and default of meat, and moreover of such meats as are unapt to concoct. For in all such cases, there can be ingendred few or no contents.

And contrariwise, though nature doe work many superfluities, yet if the wombe be so loose that it yeeldeth many seges, then as the urine shall be the lesser, so shall the contents be few or none: for nature then doth expel by sege, those superfluities, which should cause the contents.

And likewise, when there is in any part of the bodie an inflammation or excessive heat, which doth draw matter to it, either that any of those parts are weak, unto which nature is wont to expell such superfluities; for in all such cases there may want the ground,

ground, and the other contents in the urine. And as for some of them (I mean cruditie and opilation) they may be well enough bornwithal, unles their continuance be long.

But now again, there is great difference touching the time of the sickness in which it chanceth, for in the beginning and increase of sharp Agues, if the ground be lacking, it betokeneth great weaknesse of naturall strength, which if not prevented, may continue unto the chief strength of the sickness. And after such an urine, there doth follow much waking and disquietness, halfe madness and trouble of mind, and all those shall bee according to the greatness of the Ague, either extreame or mild. And sometime it is a token that there shall bee a gathering fore in some part of the body, namely, if other agreeable causes come therewith, as a winterly disposition of the aire, with an uncertain state of sickness, and unconstant alteration, and mean weaknes of the Patients power. But in the declination of the sickness, such urine ought not greatly to be blamed, for then hath nature escaped the brunt of sickness, though she be yet weak. Yea, and in the chief strength of sickness (as well as in the declination) it may seem no strange thing, if nature (as though al-

ready (she had the over-hand) do gather her power together, and draw a little nourishment to her self, and thereby causeth little or no ground to appear. But afterward when shee is somewhat refreshed, and doth more liberally nourish the body, then doth shee shew forth contents in the urine. And lightly the order of the contents is such, that first there appeareth a cloud, which afterward doth gather more strong and weightie substance, and doth become a swim or sublimation: And last of all, when it hath gathered a right naturall whitnes, and due substance, then will it grow to a ground.

C H A P. IX.

Of difform Contents.

OTher things should I here speak of, as touching the Judiciall of the contents, both of their stableness, that is, their continuance in good form, and of their due knitting, being neither tattered, nor dispersed, nor yet overmuch clodded together. But because the exact judgement thereof exceedeth the capacitie of mean wits (for whose sake I have written this Book) and cannot lightly be perceived of them, but by the Instruction

struction of a lively voice, I wil for this time
overpass the exact and perfect declaration
of them reserving it to a place more due :
And now will I briefly over-run the other
things which remain to bee considered in u-
rine, but yet not without some mention of
those other, as occasion commeth: and first
those difform Contents which occupie the
place of the ground, and therefore take his
name also.

Difform
contents,

Of this sort there are four principall: the
first is in bigness of a small fatch, and red
coloured, which you may call therefore red
fatches, because of their likeness. These (as
witnesseth *Galen*) are ingendred of the con-
sumption and wasting of the flesh when the
fatness is already melted away. But in this
there is great difference, for sometime it is
only the wasting of the reins, and sometime
of the whole body: as if there appear in
the urine tokens of due concoction, then
is that wast in the reins onely. But if there
appear in the urine default of concoction,
(namely being great) or if the patient have
an Ague, then is it the wast of the whole
body, and that standeth well with reason,
that when it betokeneth the wast of the
whole body, there must needs appear de-
fault of concoction; for in such case those

Red fatches
6. Epid.

parts which are the Instruments of concoction are so weakned, that they cannot do their office. These contents, by reason that they are gross and heavie, therefore they appear alwaies in the bottom of the urinall.

Brannie
contents.

Other difform contents there be also, of which some are like bran, and some like scales. And of those that are like bran, there is one sort smaller, and another grosser; the smaller sort is like the bran of Wheat that is finely ground, and those may I call fine bran. The grosser is like bran of Barley, or of evill ground wheat, and may therefore be called gross bran, for it is thrice as big as the other.

Fine bran.
Gross bran.

Scales.

The third sort which is like Scales, hath no notable thicknesse, but onely breadth and length. These three doe betoken waste of the strongest parts of the bodie; but yet not all alike, as *Hippocrates* doth declare in the second Book of his *Prognosticks*. Howbeit, because that place of *Hippocrates* is so difficult, that scarcely the great learned men can agree thereon, I will not now meddle therewith, but will write *Actuarius* mind of those three.

When the Ague (saith he) is grounded in the bottome of the veins, then there appeareth such fine bran. Howbeit, sometimes

Fine bran.

it is a token of the onely grief of the bladder being scabbed, as witnesseth *Hypocrates*, 4. *Aphor.* 77. But then hath the Patient no Ague, and again, there doth appear tokens of concoction in the urine. But when it cometh of the whole body, this is the cause thereof; The Ague getting power and prevailing unto the hard parts of the body (as in those Agues which are called Fevers hecticke) then in the striving between those parts and the Ague, the Ague having the masterie, doth by his violence raise of such brannie scurffe. For the nature of fire (whose operation the Ague hath) is to work according as the matter is that it findeth, either to melt it, if it be a liquid and unctuous thing, either else to scale it and fret it, if it be hard and unpliant: and the harder that the matter is, the greater scales it fretteth off; which thing you may see by daily experience, how fire melterh wax and tallow, and such like, turning them into liquids: whereas of iron and of other metals, it maketh scales and not liquor. Scales.

But when the Ague hath attained and overfet, not onely the substance of the veins, but also the strong parts of the body, and doth melt and waste them, then doth there appear in the urine, scales, broad and

and thin, which you shall know to come of the whole body (as I said of the other before) if the Patient have an Ague, or there appear default of concoction in the urine : else if these two be absent, it may come of the blistering of the bladder, as *Hippocrates* writeth 4. *Aphor.* 81. and namely, if there be in the urine an evill favour withall.

Gross bran.

Now to speak of the great and grosse bran, which as it is much greater then the other, so doth it declare a greater strength of the Ague, and that in the whole body, and all the parts of it, enflaming and burning the whole substance thereof, and therefore is it not only the worst of them all, but is nigh unto a deadly sign, and that either by the waste and consuming of the great and strongest parts of the body, or else by the burning or drying up of the bloud. Which two things you may discern asunder by the colour of them. For if they be red, then come they of the burning of the bloud ; but if they be white, then come they of the waste of the strongest parts of the body.

Note.

Hippoc. 7.
Aphor. 31.

Of this kind of contents speaketh *Hippocrates* saying : In whatsoever Agues there doth appear grounds like unto grosse bran, it is a token that the sickness shall continue long. Which saying, *Galen* doth understand

stand so to be true, *If the Patient have sufficient strength to continue with such sickness, else it may be a sign rather of short life, then of long sickness.* For as that token is commonly deadly, so those few that doe escape, do recover hardly, and not without the long sufferance of the violence of that cruell Ague.

Now as touching the foreknowledge of it, whether the patient may endure with it or no, that shall you gather of the multitude, order, and stableness or unstableness of it. For if they be many in number, and proceed to worse and worse, then it is an evill and mortall sign, and doth declare that nature is wearied and doth quize faint thorow the waste and decay of the whole constitution of the body: But contrariwise, if they appear few, and do alter continually unto lesse evill tokens, then is there good hope of health. And this shall suffice as touching these.

Now to speak of the rest, of the ragged
scraps, hairs, and other like: First you shall
understand, that sometime a good ground is
coupled with certain evill and unconnected
fragments of all sorts of humours, for
sometime there appeareth with the
contents certain ragged scraps, enclining
in

in colour toward a yellow, or a white, or else some such like, if those appear in great quantitie, they declare the matter to be half unconcoct, and that the humour (whose scraps they are) doth abound in the depth of the body, and is as dust or burned, but if they bee few, then declare they the malice of the humour to be milder, and that the use of evill meats doth cause them, the greater that such ragged scraps are, the lesser aduision of humours they declare to be in the veins, and the lesser they be, the greater heat they do betoken. For the cause of such ragged scraps is excessive heat, which doth turn those humors into a thicknes, and as it were a bony nature, by reason that they have remained long in certain veins, and were neither dissolved, nor extenuated, nor yet quickly expelled by urine.

Hairs.

Besides these there are hairs of sundry lengths, some an inch, and some an handfull long, some longer, and some shorter; and these are in colour whitely, and do betoken grief of the reins. These are ingendred in the water-pipes, which go from the reins to the bladder, so that as long as those water-pipes are in length, so long may those hairs also be, which are a gross and baked humor, wrought in form of a hair.

Of those speaketh Hippocrates, saying ; 4. Aph. 176.

In whose Urine soever there doth appear little peeces of flesh, either as it were hairs, those same come from the reins, namely, if the urine be thick. Howbeit these are sometimes seen in such mens urines as feel no grief in the reins, but only have fed some continuing space on flegmatick meats, which will prepare matter to such diseases, as they do also to many other griefs, of which to speak in this place it is meet.

But to go on with this thing that wee have in hand, beside such ragged scraps and hairs (as I have spoken of) there appear sometimes in the ground of the urine, and also dis-parkled abroad in the urine it self, sundry and divers kinds of mores (as it were) which do declare that there is grief dispersed in sundry parts of the body.

Mores.

And this now may suffice, as touching contents of every kind : Therefore now will I a little repeat out of *Aetnarius* of the diversitie of judgement, by the places or regions of the contents.

The places of the contents.

The lowest region.

That ground which fleeteth nigh to the bottom of the urinall, being in other points also good and mild, doth betoken no strange thing. But if it be unconcoct and deformed, it betokeneth default in nature, And if his

parts

parts be disparkled asunder, it betokeneth adinness in nature, which doth not resist the rebellion of noysome humors, so that in such case there appeareth need both of long time, and also more strength to overcome that evill. But as it is commendable that the ground fleet nigh the bottome of the urinall, so is it discommendable if it lye flat on the bottome of the same.

The middle
region.

Now astouching the swim or sublimation, if it be good in colour and other waies, then doth it differ only in place from a right ground: and that cometh of an unnaturall windiness, which maketh it to be so light, and to fleet above his due place, but if his colour and other like points bee evill, yet then doth it betoken lesse evill, then if it were in the right place of the ground.

The highest
region.

But now astouching the third and highest region, which is the place of the clouds. If there appear a light and thin cloud, it betokeneth no small grief of the head. But this difference is there in the clouds, the better that they be in colour and substance, the farther they differ from a right good and naturall Content. And therefore need they long time to return thereunto. And contrary wayes, the worse that they are in colour and substance, the less they are to be blamed,

blamed, by reason of their place, which is so much distant from the naturall place of Contents. For this is a generall rule : The lower that good contents fleet in the urine, (excepting alwaies such as cleave to the hard bottom) the better they are. And contrary wayes of evil contents and such like, the higher they fleet, the lesse evill they betoken.

Now to make an end of this. You shall observe a certain proportion that is between the parts of the urine, and the parts of mans body. The highest part of the urine doth betoken, the highest part of the body, namely the head, and such other neer unto it. The middle region of the urine doth represent the middle parts of man, as the breast, the bowels, and the parts about them. The nether region of the urine doth purport the lowest parts of man, from the bowels downward. And if you mark well this proportion, you may the easier judge the griefs of the parts of man.

The proportion of the regions, to the parts of man.

For when the contents which in colour and substance are naturall, and yet by the abundance of windiness be lift up to the higher part of the urine, it declareth some great pain to be in the head. And in like manner, when the swim or sublimation doth

doth declare grief, that grief must be lodged to be in the middlemost parts of man (as I said before) and so of the other.

Again, as this proportion between the regions of urine, and the parts of mans body doth declare that place in certain height, so doth it in breadth also by like proportion, if you doe duly mark the side, unto which the contents do decline.

And if you mark wel what I have said, you may perceive the only cause of most such griefs, when the contents is only disordered in place, cometh of an unnaturall windiness, but yet commonly annexed with phlegmatick and unconcocted matter.

Bubbles.

And as the windiness doth cause disorder in the contents, so it causeth also another kind of things not to be neglected in urine, and that is bubbles: which sometimes flore in the ring or garland onely, and sometimes in the middest of the urine onely, and other times doe cover the whole face of the urine.

The Bubbles which stand round about over the garland onely, and continue without parting, if they be of the same colour that the urine is, they declare great pain to be in the head, and that in all parts of the head, if the Bubbles joyn together without parting. But and if they occupie only the one half

half of the garland, then is that pain in the one half of the head. And so forth may you judge by like proportion.

But if they doe part in sundry places, and joyn not all together, it is a token that the pain is the lesser, and cometh of a weaker cause. The more yellower that their colour is, the greater they declare the pain in the head to be. If they be white, or rather whitish, and stand about in the compasse of the garland, they betoken little pain or none. And if the urine bee thin withall, they betoken weakness of naturall heat, or else the opilation and stopping of the reins, namely, if there appear no ground in the urine. This doth *Hippocrates* witness, saying ; *When in the urine there swimmeth bubbles, they betoken grief in the reins:* And also that it shall long continue. The reason of the long continuance (as *Galen* and *Philothens* doe both declare) is, because that the grief commeth of cold and tough phlegmatick matter, which always is long before it may overcome. *Pliny* also saith, that *that urine is evil, which is ful of bubbles and thick,* in which if the ground be white, it is a token that there shal be grief either about the joynts, or else about the bowels. Howbeit, yet sometimes the bubbles are not

7. Aph. 14.

Lib. 28. c. 6.

an evill token, but contrariwise, a good token of concoction, and declare that nature doth now apply her self wholly unto concoction. And this do the Bubbles signifie, when they appear in the water, in which they were not seen long before. And therefore in an Ague, we may conjecture the declination of it, when we see bubbles to appear after that sort; except it be so that they appeared in the urine at the beginning of the sickness, and hath so continued still: For then they declare grievous pain to be in the head, yea and that dangerous, if the urine also be thin in substance. But if the substance of the urine be thick, then the bubbles are not so evill a sign, neither declare so greivous danger.

Some.

Sometimes in stead of Bubbles which doe not appear when they should, it sufficeth that there appear a gross some (as it is sometimes seen to rise upon wine) and it doth betoken even the same thing that the Bubbles do, especially in the declination of the Ague, of which I spake a little before.

These Bubbles do appear very thick about the garland, in the urine of him that hath the issue of seed, or wast of nature. Sometime also there are seen in the Bubbles certain small scrapps (as you would say) much like hairs

hairs in grossness, and of such length sometime that they reach from the one side of the bubble unto the other, and sometimes longer, and sometimes shorter, which things may come either of the waisting of the reins, or else of the shedding of nature.

The cause of the generation of bubbles, and also of the dispersing and elevation of the contents, is an unnaturall windiness. Of which, as there are divers kindes much differing asunder, partly in multitude, partly in substance, and partly also in quality, so doth the bubbles engendred of them diversly varie, according unto those differences, whether they be sole and severall, or joyntly many knit together. But windiness if it be grosse, then doth it pusse up such Bubbles; and if it be subtile, then doth it rather work a dispersion in the contents, and is not able nor meet to cause Bubbles. And hereby may you know the qualitie of the windiness, and likewise also the quantitie. For there appeareth lesse quantitie of windiness to bee where the contents onely are dispersed, then where such Bubbles be engendred.

Now as touching the other qualities of it, as heat and cold (which are the chief qualities indeed, and most active) you may judge
G 2 them

them by the colour of the bubbles. For as pale colour, and other low colours declare coldnes of that windiness, so high colours enclining toward yellow or higher, be certain tokens of heat.

Bubbles that are small, and thick knit together in the garland of the urine, doth betoken a grosse windiness, whose cause cannot easily be vanquished; for the grossness and toughnesse that is in them, will not suffer them to swell great, and that causeth them to be so small. And contrariwise, the greater that the bubbles be, and the more bouled, the more they declare that windiness that causeth them to be severed from rough matter. Moreover, the colder that such windiness is, the lesser grief is felt of them,

Bubbles in the urine of old men, namely being great and large, doe betoken cold windiness, but sometime such bubbles are a sign of rheum distilling from the head into the lights, especially if the Patient at the entring of Summer were very hot, and so did drink much, which matter, the head being dryed, did draw unto him, and did distill again part of it down into the lights, whereof commeth a cough, and part of it into the womb, which thereby is moved to laxe.



CHAP. X.

Of the Garland and other like things.

AS I have compendiously, and yet not very slightly spoken of those former parts, to bee considered in urine, so will I briefly speak of a few more, which may not well be omitted, and so make an end of the Iudiciall.

First, therefore in the over-part of the urine, round about the edge of the urine there appeareth a garland, circle, or ring, which doth there appear, by reason that the higher part of the urine being thinner than the rest, and more subtriller, and therefore doth not only more sooner alter, but doth more readily declare the alteration. Howbeit sometime there doth appear no ring at all; and that is when the colour of the urine, and of it is all one, by reason of the great force of the cause which altereth the urine, but yet so that nature doth match that humour, and is neither overcome by it, neither yet hath overcome it. For if nature have plainly either got the victorie, or lost it, then is there another colour in the garland, then is in the rest of the urine.

The Garland.

The Judiciall of Urine.

Now if the colour of the urine be evill, and the colour of the garland better, it is a token of health. As if the colour of the urine bee yellow, red, or crimson, or any such like, and the colour of the garland be white, or whitely, it is a token full of good hope; but when the colour of the whole urine is evill, and the colour of the garland worser yet, then is it an evill sign. As when the colour of the urine is green or purple, and the garland worse coloured, then is it a plain token that nature is overcome, and that the evill humours have gotten the upper-hand.

Of these more particularly doth *Egidius* treat, but yet not more truly nor more sufficiently, his words are these: *If the circle of the urine be thick and waterie, it is a token that the binder part of the head is oppressed with phlegmatick matter; but if it be purple-coloured and thick, then is the forepart of the head overcharged with blood.*

A pale and a thin circle declareth the left side of the head to be troubled with melancholy matter; but if it be red and thin, it betokeneth choler to abound in the right part of the head.

Leddy or
ash-colour.

A Leadie or Ash coloured circle, doth signifie the falling Evill, through the great griet of the brain.

And

And further declareth that such grief shall proceed by the sinnewes into the other parts of the body. But if after such a leadie colour there follow a reddish colour, that is a good token; for then doth nature gather strength again, and the powers of the brain reviveth.

If the colour of the garland be green, and Green. the Patient have a burning Ague, it is to be feared, least that the abundance of choler shall cause a Phrensie.

Black colour in the circle doth sometime Black. betoken mortification, and sometime only extreame heat. But these shall you distinct (as I said before of the urine it self) by the order of the colours. For if green colour went before, then doth the black betoken adustion through heat, but if his colour last before was ash-colour, then is it a token of death, comming through the dominion of cold. And thus much as touching the colours may suffice for this time.

Sometimes also you shall perceive a quivering and trembling in the garland, and Quivering in the garland. that declareth grief in the back-bone. And thus many tokens be taken of the circle or garland.

Sometimes there will appear fleeting on the urine, certaine scum or fattiness, Fattiness. sometimes like drops of oyle, and sometime

like a thin spiders web, and these both doe betoken the melting of the fat within the body, as *Hippocrates* witnesseth in his Prog-
 7 Aph. 30. nosticks, howbeit in his *Aphorisms* he doth assign it as a token of the grief of the reins peculiarly, saying; *In whole urine there fleeteth fattiness, and that much at once, they have pain in the reins, but shall not long endure.*

This *Aphorism* doth *Galen* understand so to be true, if that fattiness appear quickly and much at once; else if it come by little and little with longer continuance, so doth it not betoken wast only of the fat about the reins, but rather throughout the whole body, which sign yet is not alway evil, except it continue long; for if it continue but a little while, it declareth no great evill.

Now to goe forth with other signs; If the urine have a stinking savour, it is ever an evill sign, for it doth betoken some putrefaction more or lesse; as of the bladder onely, by some blister or sore in it: and that most certainly, when the stinck is very great, and there appeareth also scales in the urine, and matter. But if there be matter in the urine, and the stinking savour but mean, then doth it declare the sore to be in some other part of the body. But this ever is true,

Stinking savour in urine.

true, that matter in urine is a token of a sore. And if in continuance of time the matter and stinck doe abate, it is a good token, but if the other continue or increase, it is an evill sign. If the urine doe stinke, and there appear no matter in it, then is it a token of some mortifying. For if there be in the urine mean tokens of concoction, then is the mortification in some one part of the body; but if the other signs in the urine be evill, then is that mortification rather of the whole body, then of any one part of it.

And thus have I over-run briefly the chief things to be considered in urine, which (I say) are appertaining or annexed to the urine it self. Howbeit two other things there are, which though they be more plain-er then these other, yet may they be over-passed no more then the other: that is to say, blood coming forth with the urine, and gravell expelled therewith also.

Blood coming forth with urine, doth declare some sore to be in the reins or bladder (as *Hippocrates* writeth in his *Aphorisms*) or else some vein to be broken about the reins, namely if it come suddenly, and without manifest cause. Howbeit, as *Galen*, *Oribasius*, and divers others do declare, and reason also with experience doth consent, there

there may appear blood in the urine also, if that there be such a sore in the liver, or in the shaft. But in any of these cases, the pain felt in the place and part, will utter from whence the blood commeth.

Gravell.

Now to speak of gravell: *Hypocrates* saith, *In whose urine there appeareth gravel in the bottome, they have the stone in the bladder, or else in the reins, as Galen addeth; but commonly if the stone be in the reins, the gravell will be red, as Hypocrates declareth in his sixt Book of his Epidemics, And thus now will I make an end of the iudicial of urine.*

CHAP. XI.

Of the Commodities and Medicines of Urine.

THe greatest commodity of urine is already declared: that is, 'That it doth declare unto man, the manifold diseases which happen unto him; and thereby doth not only give him knowledge of the cause, and so consequently of the cure of the same, but also warneth him before of the grief to come, whereby he may take an occasion to eschew it, if he will be diligent.

Now

Now as this is the greatest commoditie of urin, so it hath many other as well in use of medicine as other waies, of which I will write some, though not all. And first out of *Plinie*, which reciteth strange operations of *Plinie*. the urine of a Hedge-hog, and of a Beast that the *Greeks* call *Leontophon*, and moreover of the Beast *Lynx*, which I omit now with many other: but this will I not omit, *Urine of* that *Hofthanes* saith: *That if a man let his man.* own urine drop upon his feet in the morning, it is good against all evill. And that it is good for the gout, we may perceive by *Ful-*lers, which never have the gout, by reason that their feet are so often washed with it.

The same *Plinie* writeth, *That the Urine* *Ostrich u-* *of an Ostrich, will do away blots and moles* *rine.* *of Inke.*

Also that if Urine be tempered with water of like quantitie, and so powred at the roots of the trees, it will both nourish them (as many men say) and also drive all noyance from them.

The urine also of men or oxen, tempered with hony, and given to Bees, will cure them *Bees.* that are poysoned with the flower of the *Cormier* or *Cornoiller* tree.

And likewise if Beans be steeped in u- *Beans.* *rine*

urine and water three daies before they bee sowed, some judge that they will increafe exceedingly. *Dioscorides* saith, *That a mans own urine is good to be drunk for stinging of Adders, and against poison, and also against the drop sic when it doth begin: And for the stinging of the sea-Adders, of scorpions, and dragons; it is good to soke the stinged part withall.*

Dogs urine.

The urine of Dogs is good to soke the place that is bitten with a Dog, and to cleanse manginess, and itchinesse, if salt peter be added thereto. And that that is old will more strongly cleanse scales, scurff, scabs and hot pusses. Also it stayeth fretting sores, namely, on the privie members. Furthermore it stincheth mattering eares, if it be dropped thereinto, and if it be sod in the rind of a Pomegranate, it expelleth worms out of the ears.

Childes urine.

The urine of a child under 14. yeers of age, doth cure the toughnes of breath, if it bee drunken. If it be sod in a brazen vessell with honey, it healeth creythes, and also the web and the rey in the eie. There is made of it and copper, good soulder for gold.

Dregs of urine.

The dregs of urine is good for Saint *Anthonyes* evill, if it be nointed thereon, so that (as *Galen* doth wisely add) the sore be cooled

led first with some other thing, and bee not burning. If it be heated with oyle of privet, and laid to the womb of a woman, it will assuage the grief of the mother, and cureth also the rising of the same. It cleanseth the eie-lids, and the creythes in the eyes.

Oxe stale being tempered with myrrh, Oxe stale and dropped into sore eares, healeth the pain of them. The urine of a wild Bore, is of the Wild bore. same vertue if it be kept (as *Sextus Platonius* writeth) in a glasse, and dropped warm into them, but it hath a more peculiar property in breaking of the stone, and to expell the same, if it be drunke.

Goats urine drunke every day, with Goats urine Spikenard, and three ounces of water, is good for the dropfie, for it expelleth urine by the lege, and it cureth pain of the ears, if it be dropped into them.

Asse pisse (as it is written) is good for the Asse pisse. grief of the reins, if it be drunke.

Mules stale (as *Paulus Aegineta* saith) Mules stale. is good to heal pain in the joynts.

The stale of Camels and Goats also doth ^{Camels and} provoke sege, and therefore is good for them ^{goats stale.} that have the dropfie.

Sextus Platonius saith, That Goats u- ^{*Sextus Pla-*}rine (if it be drunke) doth provoke womans ^{*tonicus.*} terms, and cureth pain in the eares being dropped

Paulus A- dropped into them, and being mixed with
gineta. mulset wine, and so dropped into the eares,
it draweth out matter, if there be any.

Wild Bore. The urine of the wild Bore with mulset
vineger, is good for the falling evill, if it be
drunke.

Dogs pisse. A Dogs piss tempered with dust, and laid
in wool, will heal corns marveilously, and
destroy warts.

Childes
urine. A childes urine will heal the stinging of a
Bee, Waspe and Hornet, if the place bee
washed therewith.

Mans urine. A mans urine will cleanse the freckles
and spots in the face. And if a woman can-
not be delivered of the after burden, let her
drinke mans urine, and she shall be delive-
red straight.

Collumella. *Collumella* saith, that the best dunging for
yong shots of trees, is mans urine, namely,
which hath stood half a yeer. For if you
water vines or apple-trees with it, there is
nodung that will cause so much fruit as it
will doe: and not only that, but it causeth
Sheeps urin also the savour and the taste both of the ap-
ples, and of the wine, to be much the bet-
ter.

Constantinus
Africanus. *Constantinus Africanus* saith, That the u-
rine of a Sheep, or an Oxe, with some hot oil,
is good for the grief in the eares that cometh
of

of cold. Urine (as *Vitalis de Furno* saith) *Vitalis*. fretteth, dryeth, and burneth, and is good for the grief of the spleen, if it be drunk, as *Gentilis* writeth.

The Urine of a male Ass, as the same *Vi-* Ass stale. *talis* saith) tempered with Nardus doth increase and preserve hair.

And as some say (by the writing of *Mar-* *M. Virgilius* *cellus Virgilius*) Urine is of no smal nourishment, for divers folk in the time of dearth, have been preserved by the onely use, and drinking of it.

Also *Marcellus* the Practitioner, in the *Marcellus*. 27. Chapter doth witnesse; That the Urine of a man is good for divers diseases of the wombe and bowels, and namely for the Collick, because that partly with provoking of vomit, and partly by occasion of seges, it expelleth strongly all noysome humours, and for the same cause doth common Practitioners keep it still in daily use.

Ulderick Hutten also witnesseth, That *Uldericus* *Huttenus*. he did drive away the Ague above 8. times with the only drinking of his own Urine, at the beginning of his sickness. And many still doe use the same practise, and it proveth well.

Likewise *Marsilius Ficinus* writeth that *Marsilius* *Ficinus*. Many men doe use to drink urine for the Pe-
stilence,

silence; which thing did *Galen* write long before him, and also *Paulus Aegineta*; and doe testifie also, that it preserved them that dranke it: at the least way as they thought.

Galen.

All urine (as *Galen* writeth) is hot in vertue, and sharp (as saith *Aegineta*) howbeit, it differeth according to them that make it. For the hotter they are that make it, the hotter is it also, and likewise the colder urine cometh of a colder body.

Mens urine is the weakest of all other, except tame barrow hoggs; for they in very many points agree with man, but the urine of wild Bores is stronger.

Mans urine

Mens urine is of as strong cleansing vertue as any thing else, and therefore doe Fullers use it to scoure and cleanse their cloth. And in cure of griets also for the same reason, it is used to soke, and wash maunginess, and scabbedness, and running sores that are full of corruption and filth, and specially if they have in them putrified matter, and for such sores on the privie members it is good, and for mattering eares, and for scales and scurf, if the head be washed in it.

I have healed with it many times sores on the toes, namely, which came of bruises, and were without inflammation, and that in servants and husbandmen, which had a journey

journey to goe, and no Physitian with them, bidding them to wet a small clout with it, and to put into the sores, and then to bind a cloth about it, and as often as they listed to make water, to let it fall on their sore toes, and not to take the cloth away till it were quite whole.

That medicine which is made of childes urine, called of some men in Greek, *Chryso-* *Chrisocola* (that is to say, gold soulder) because men use to soulder gold. This (I say) is exceeding good for sores that are hard to heal. For this medicine doe I use for the chiefest, mixing it with such other things, as are good for such like sores:

In the time of Pestilence in *Syria*, many did drinke Childrens urine and mens also, and thought that they were preserved by it.

Of urine also, do Alchumylts make divers *Alchumylts*. things, as salt, and other things moe.

And many other commodities there bee of urine, as for washing and scouring, and other like, which for brieftness I over-passe, and the rather, because they are commonly known of all folk.

*Of the Diseases touching Urines, and
the Remedies for the same.*

NOW to come to that I promised, as touching the griefs which hinder urine, or expell it disorderly, either in time oftner then is meet, or in qualitie, with other fashions then is agreeable to it, or like other sorts, I will briefly write, not intending to teach the art of curing them, (which would require a longer Treatise, and a meetter place) but onely to name certain of the most common diseases, and to set after them such simple and uncompound medicines onely which cure those griefs.

Stopping of
urine.
The stone,

First therefore, touching the hinderance or stopping of urine, it is not unknown, that one common cause is the stone, which sometimes is in the reins, and sometime in the bladder. I shewed you before, that commonly you may discern those two asunder, by the colour of the gravel, but the more sure token is the grief in the sick part.

Now for the cure of the same, doth these medicines serve, which follow. But as I have alwaies said, you shal use them with the counsell of some learned Physitian; for there is great difference both of the grief, and of the medicines.

Medi-

*Medicines for the Stone, both in the
Reins and Bladder.*

Astra Bacca.	Madder root.
Ameos.	High Mallows seed and Root.
Angle toches fod.	Mogwort.
Betony.	Parfeley.
Bryony root.	Pelliter of Spain.
Bylgrum.	Pyony Berries which are black.
Chamamel.	Radish.
Capers Bark, namely of the root.	Sampere.
Claret seed.	S. Johns Wort.
Clot seed.	Sperage.
Dock root.	Scholm.
Fenel seed, and root.	Swines Fenell.
Goats blood.	Sothern Wood- feed.
Gladian.	Sour Almonds.
Gromell.	Tent-wort.
Gum of Plumtree, and Cherry tree.	Tutsan Berries.
A hedge Sparrow.	Water Plantine.
Harebell.	Winter Gilli-flower
Kneholm root and Berries.	

And beside these there are divers others.

Also the Stone it selfe that came from a

man, being braid and drunken, will breake and expell that other within him.

Beside the stone, also it causeth the urine to be clean stopped, by reason of weakness of the expulsive vertue, and sometimes through clodds of blood, which rest in the shaft. Sometimes also through tough and clamminie humours, and sometime through some swelling within the yard, and divers other wayes also, of which the declaration is too long for this place and time : but another time I entend to write of them at large, and of all other griefs of mans bodie.

But to return to this matter that is in hand. One other stop of urine there is, which doth not clean let it, but causeth it to avoid lesser then it should ; and this commeth of like causes as that other last did, save that the cause is less, according as the stay of urine is, and therefore the cure in both is much like. For if it come of weakness of the expulsive vertue, then with the use of other hot meats and drinks, those medicines are good which doe provoke urine, as these be that follow.

Medicines which doe provoke urine.

Anise-seed.

Balye.

Ally-saunders.

Bylgrum.

Alkakengi.

Cammock.

Char-

Charlock.	Leeks. Mints.
Chervell.	Margerom.
Carawayes.	Maiden hair.
Calamus Aromaticus.	Navew. Nepte.
Cubebes.	Negella Romana.
Dictany of Candie.	Nettle. Pepper.
Dragance.	Pye Ryall.
Fumitorie.	Qninces.
Fatchys.	Rue. Rosemary.
Flower delyce.	Rocquet.
Garlike.	Savine.
Ground pinc.	Sage. Saverie.
Ginger.	Time.
Helecompane.	Valerion.
Honey.	Wild Marjoram.
Juniper and the Berries.	Wild Parseley.
Lafe saverie.	Wild Time.
	Water Cresses.
	Woodbinde.

with many other, and namely those for the most part, which I named before to be good for the stone. But there must be discretion in the use of them.

Besides those, is there a disease named the Strangurie (which some corruptly call the Excess of Strangurion) in which Disease the urine ^{urine.} doth continually drop forth, as fast as it cometh into the bladder. And therefore may it well be noted the first kinde of such

griefs as provoke forth, and further urine excessively. For that strangurie these Medicines following are noted good.

Medicines for the Strangurie.

Alifander.	Knot grasse,
Altra Bacca.	Kneholm.
Brokelime.	Sperage.
Ceder berries.	Seholm.
Ceterake.	Spatula Fetida.
Calamus Aromati-	Turpentine washed.
cus.	Wilde Fennell.
Gladiane.	Water mints.

But you must consider (as I have often said) that as the disease may come of sundry causes, so it must have sundry cures. For most commonly these are good that I have written, yet such may bee the cause of the sickness, that they may do harme, therefore take alwayes counsell of some learned Physitian.

Another kinde of excessive making of urine cometh of the weakness of the retentive vertue in the reins, whereby the Patient pisseth as fast as he drinketh, and that in like quantitie. This I may call the flux of urine, or pissing evill: or after the imitation of the Greeks, the pisse gout. For which disease it is not greatly commendable

Flux of urine.
Pissing evill.
The pisse gout.

to set forth medicines with the onely bare names. Howbeit, if I doe it, I trust no man will the rather misuse them, namely being warned so often to take no medicines without counsell, and specially in this thing, For some of the Medicines must be received inwardly, and some of them emplastr'd outwardly.

Medicines for the pissing evill.

Apples,	Cycory.	Comferie,
Dates.	Endive.	Paritarie.
Etecompane.	Penny wort.	Lettis.
Perys.	Lintels.	Pomegranat.
Myrtle Berries.	Purselane.	
Night shade.	Vine leaves.	

Other defaults there be of excess of urine, as of them which cannot keep their urine, and namely of children, which pisse their beds. This disease cometh oftentimes of the dissolution of the muscle which should keep the urine, and therefore requireth cure meet for it, and unmeet for this place, and such shortnesse. Wherefore for this time here I will make an end, trusting that all men will with as gentle heart receive this my writing, as I of gentleness have taken the pains to set it forth.



Additions.

Of the diversities of Colours, and of the making of them.

BEcause that it is not very easie for every man to distinguish colours duly asunder, I thought it good at the end of this Book, a little to touch the distinction and making of them, namely of such as are mentioned before in this Book.

Milk white.

Milk white, by the name of it self doth sufficiently declare what it is ; for it is the very colour of milk, though the substance need not to be so thick in the urine, as in the milk, for the colour must be understood severall from the substance, both in this and all other colours, which thing would be remembered, for it might else (as it hath often done) deceive the simple folk.

Horn white.

Horn white in like manner hath his name of the thing that it assimuleth most, for it is like the white and cleer part of a horn of a laathorn, or such like.

Grey.

Grey is like the white part of a mans nail next unto the joynt, or like hoar hair that is not very white, for gray is so much darker then horn white, as horn white is darker then milk white.

Pale

Pale colour hath a certain appearance of Pale. yellow in it, but is exceeding little. If you seeth a peece of the rind of Pomegranate, and then put to it thrice as much clean water, it will be a pale colour.

But if you put thereto little or no clean water, it will be flaxen coloured, that is Flaxen. somewhat more yellower then pale.

After it followeth pale, which is a kind Pale. of light yellow, something lighter in colour then crown gold.

For the colour of pure gold (as an anrell Yellow. or royall) is a right yellow colour.

A light saffron colour is, that colour that Light saffron. saffron doth make when it is steeped in water, and laid light on any white. For if it be laid on deep, then doth it make a full saffron colour. For that is called a saffron colour. Saffron. which saffron doth die, and not that that is in the saffron it self. For that is very red, and is higher then claret, which is a Red. Claret. mean colour between saffron and red, as if it were made of them both mixed together.

Crimson is a dark bloody colour, well Crimson. known by his own name, but is not in urine so light as it sheweth in cloth. Purple, Purple. needeth not to be much described, being so commonly known, howbeit if you will see the making of it, mixe a dark crimson, with an

an orient blew, and it will be purple. And because that many men be deceived in the latin name of this colour, you shall observe that it is not that which in Latin is called *Purpureus color*, (as most men think) for that is rather a crimson, but it is called more peculiarly *Purpura violacea*, or *Pasfens color*.

Blew.

Blew colour is the colour of the cleer Skie, or of Azure. Howbeit, in urine it is not so orient, but if you will mix pure white (as white lead, or pure lime) with due portion of right black (as cole dust, or other like) then there will of these amount that blew, which is ascribed to urine.

Green.

Green is a compound colour of blew and yellow daly tempred together. And the right green have I in this Book called a stark

Stark green.

green. But if the yellow do exceed in it, then is it a light green; and contrariwise, if the

Light green.

blue do exceed, then is it a dark green: Of this green doth *Dioscorides* mean, when hee doth say of divers herbs, that their leaves be black; and sometime when he noteth white-lines to be in herbs, he meaneth a light green, though he other times understandeth thereby a certain horiness; of which thing in mine Herball you shall read more exactly.

Oylie.

Oylie colours differ from green oylie in
their

their lightness of hue, and thinness of substance in the urine where they appear. The light oylie is somewhat lighter, (or rather) Light. brighter and more glittering then light green, So is the stark oylie brighter then the Stark. stark green, and the dark oylie then the dark Dark. green, which all cometh through the thinness of substance in the urine.

Ash-colour is darker then blew, and is Ash-colour. made of the same sort that blew is, save that it requireth more of the black by twofold. This is the colour of lead, which is much darker then the inner part, though indeed both are one colour, and differ onely in brightness and darkness, which ought rather to be called the hue of colours, then colour.

Now as for black, I need not to speak any Black. whit, for as all men do know it, so these very letters do shew it, which though of all other it be most deadly, yet is it surely of all the most mightie, for it overcommeth all colours, and none can change it, so that well it may be called the colour of death. For as death overcometh all bodies, so black doth damp all colours; beside, that it is the messenger and token of death, which is the end of all things, and black the end of colours.

The Exposition of certain VVords.

NOW for because I was inforced to use some (though but few) terms in this Book, which be not wel known of the most sort of men, though a great number know them well enough, by often talking with Physitians, I thought it good here to declare some certain of them, for the aid of the most simple sort.

Ages.

Because that in the judgement of urines, the differences of ages ought to be considered, you shall understand that the chief differences of them are four, that is to say, *Childhood, Youth, Manhood, and Old-age*, for though there be commonly 7. Ages reckoned, yet these be four principall, and the other three be comprehended under these four, childhood endureth from the hour of birth till the end of 14. yeers of age, and is of complexion hot and moist. At the end of 14. yeers beginneth youth and lasteth till the 25 yeer, and this age of all other is in complexion the most temperate. From 25. untill 35. yeers, is the flourishing of manhood, but yet that manhood lasteth (though not in full freshnels) untill 50. yeers of age, and this age is of complexion hot and dry. From 50. yeers forward,

Childhood.

Youth.

Manhood.

forward, is the time of age peculiarly called, Age. in which time mans nature is cold and dry, and not moist, as many doe falsely thinke.

Active qualities, see the title of qualities.

Alterative

Alterative vertue, see in the title of vertues.

Active q.

Brightness.

Brightness in urine must be marked for a severall thing from cleernes. For the brightnesse betokeneth the orientnes and the beauty of the colour, with a certain glistring.

And cleernes is referred to the substance of urine, and is ever annexed with thinness of it. Yet is it a divers qualitie from thinness.

Cleernes.

So may an urine be cleer in substance, by the reason of his thinness, and yet not bright in colour, and not cleer in substance, but this would be well pondered, lest this necessarie distinction, cause a negligent confusion.

Criticall dayes be such dayes, on which there is (or may be) perceived some certain

Criticall]
dayes.

token and great alteration in the sick body, either to health or death, or continuance of sickness. What these be, more at large I will hereafter (God willing) declare in a Book peculiarly, because it requireth more largeness of words, then is meet for this place.

But one thing I must tell you, that the same dayes also be called Iudiciall, but not Indiciall, for the Indiciall daies are of another kind : but yet associate to these other.

Iudiciall
dayes.

Cruditie

Cruditie. Cruditie is the rawness of the meat in the stomach, when the naturall operation of it cannot duely digest the meat which it hath received; and therefore the urine which declareth default of such digestion, is called a crude, raw, and unconcoct urine.

Cupping. Cupping is commonly known, that it needeth no declaration.

Cloddie urine. A cloddie urine is that which hath in it clods of blood, or other crude matter, or any clusterings of difform contents.

Dulness. Dark ground is not meant of the darkness of colour, but rather of the slenderness of substance, so that it can scarcely bee discerned to be any ground, by reason that it is so neer in shape and substance to the rest of the urine. Dulness of colour is contrary to brightness, so that when the colour lacketh all brightness, then is it clean dilled, and whatsoever thing causeth decay of such brightnesse, that thing dulleth urine.

Divers. Those contents be called divers, which have neither their own right form, nor any other certain, but are altogether disordered and out of form, rather seeming to be many, then to be one.

Duly knit. Duly knit, is a property of due contents, when they are not tattered, ragged, nor jagged, nor flittering asunder, nor yet are not
so

so clammed together, as tough fleam, or any such thing, but are in a moderate mean between both these.

A gathering sore, is that sore that is caused of the excessive recourse of humours into any part of the body, as a bile, or any other like.

A gathering

Harvest, seek times of the yeer.

Harvest.

Judiciall daies, seek Criticall dayes.

Judiciall

dayes.

Inequalitie of substance in urine doth appear to be the difforments and disagreeing of the parts of it together; as when it is thin in one part, and thick in another. Howbeit, it is as well used for the alteration from a mean substance to thicknesse or thinnesse, or other wayes unnaturall. Obstruction, Obstruction, is a stopping commonly of the veins, and such great conduits (which convey blood or any other humour) so that the thing which they should convey cannot freely pass as it ought. But if the like stopping happen in the pores of the skin, (I mean those unsensible holes, by which sweat passeth out) so that neither sweat, nor any like excrement may pass that wayes, then is it most named Oppilation. Howbeit, as these words be sometimes used the one for the other, so they be applied also to other sundry parts of the body; but evermore they betoken

Inequalitie.]

Obstruction.

Oppilation.

ken such stopping in that part, that natures work is hindered thereby.

Principall members.

Principall members (as to our purpose now) are these 3. the brain, the heart, and the liver.

Passive.
Putrefaction.

Passive : seek Qualities.

Putrefaction is commonly known to signifie, rotting.

Qualities.

Qualities active, are named heat and cold, because they are more apt and able to work, then to be wrought. And contrarie waies, driness and moisture are named passive, or suffering qualizies, because they are more ready to be altered by the working of heat and cold, then to work themselves; howbeit yet they doe work also.

The four times of sicknesse.

There be in sickness four principall parts of time, to be observed of Physicians : The beginning of sickness, the increase or augmenting, the standing or chief force of it, and the declination or asswaging of it.

The beginning.

The beginning is, from the time that sickness hath overcome mans strength, and brought him to lie down, till there doe appear manifest signes of concoction of the matter, whereof the disease cometh, at which time, the sickness waxeth fiercer and fiercer: and while it so continueth, that time is called the Increase and augmenting of

The increase.

of sickness, but when the violence of the sickness is at the most, so that the rage of it is at one stay, and neither increases nor decreases, that time is called the standing, stay, state, or chief strength of the sickness. And after that the furious rage of sickness doth abate, and calm his cruell stormes, then is the declination of the sickness: after which (if the Patient escape as very few die in the declination) then followeth recovery to health again. And these be the four generall or universall times of sickness. Beside these there be other times more particular, wherof now to speak I need not. The diversity of times in the yeer are duly to be observed, for they do much alter mans body.

The state.

Declination.

Times of the yeer.

The Spring time increaseth blood and bringeth all the parts of the body to a temperance, as nigh as it can. For it of all other times is the most temperate, neither excessively hot, nor cold; neither moist, nor dry; but of a just temperature, as *Galen* proveth abundantly in his first Book of Temperaments, where he doth much blame them that name it to be hot and moist, which he saith, is of all other the most pestilent state of air. This Spring, after *Galens* minde, doth begin about the tenth day of *March*, and endeth about the 14. day of *April*, so

The Spring.

I

that

Summer.

Harvest.

Winter.

Another
sort of these
times.

that it lasteth but 6. weeks, and 2. dayes. For at the rising of the *Pleiades* (which is now in our time about the 24. day of *Aprill*) he saith that Summer doth begin. Which Summer is in complexion hot and dry, and therefore meet to increase choler, which in that time doth abound. The Summer lasteth 21. weeks. Harvest doth begin after *Galens* minde, about the 17. day of *September*, and lasteth 7. weekes. The Harvest, is dry of complexion, but neither only hot, nor only cold, but is distemperate in heat and cold. For in the morning and evening it is cold, and at noon it is hot. So may it not be called justly (as men do name it) cold and dry. In this time doth melancholy increase. At the end of Harvest, about the seventh day of *November*, doth Winter begin, which time is cold and moist; and therefore increaseth flegm, which is like in complexion unto it. And the Winter lasteth till the 10. day of *March*; so, is it in length about 17. weeks and a half, and then beginneth the Spring time again. And this is the course of the year, after Physick. Other men which in-treat of Husbandry, do part the yeer into 4. equall parts, giving 3. months to every time. Unto the Spring they give *February*, *March*, and *April*. To the Summer, *May*, *June*,

The Judiciall of Urine.

III

June, and *July*. Unto Harvest, *August*,
September, *October*. And unto winter they
appoint *November*, *December*, and *January*.
Why the Physicians part the yeer one way,
and writers of husbandry another way, at
more convenient time I will declare.

Vertues naturall are four. The first is, That
which draweth nourishment into due places,
and that is called the attractive vertue. Vertues.
Attractive.
The second, is it that altereth the nourishment
into a due form to nourish the body,
and is called the alterative vertue. Alterative.
The third is that vertue, which keepeth in the good
nourishment, till the alterative vertue hath
duly altered it, and therefore is called the re-
tentive vertue. Retentive.
The fourth, is called the ver-
tue expulsive, because his office is to Expulsive.
expel those superfluous excrements
which are left, when the other
vertues have done their
office duly.

FINIS.

1914

[illegible]

1948



The Safe, New Way of examining Urines by Weight, first invented and found out by Joannes Baptista Van Helmont, that famous Philosopher, and Physitian.

AN Ounce may weigh 600 grains. I got a glasse Vessel with a narrow neck weighing 1354 graines, but filled with rain Water weighing over 4670 grains. The Urine of an old man is found to weigh in the same Vessel 4720 grains, or to overweigh the rain water 50. grains. But the Urine of a healthy woman, of the age of 55 years weighed 4745 grains. The Urine of an healthy yong man of 19 years of age weighed 4766 grains. But the Urine of another yong man of equall yeers, being abstinent from drinking, weighed 4800 grains : And a yong man of 36 yeeres of Age, having a Tertian with a Cough, weighed 4763 grains. But the aforesaid yong man of 19. yeers of Age, having a double Tertian, the night before drunk little ; but his water weighed 4848 grains, which was 82 grains more then when he was in
(*) health.

health. A Virgin troubled with a passion of the heart, made water like rain water, and which therefore equally weighed with the rain water. The Urine being warm, is alwayes found to bee a few grains lighter, then when it is cold, as also more large.

Let therefore the vessel be of a short neck, and pointed so, that even in a point of time you may meature the Urine: To these other Observations may be added, by a curious Observer of these Directions specified: And it is a farre easier Method, then that which by another Author is reduced into Aphorisms, by weighing out of the whole man; and so judging of his particular estate.

Turnheiserus also, hath invented a new way of judging of Urines, in framing a Stillatorie Vessel for urine, and distinguishing it into 24. parts, and marking it out, on the outside with his lines, divideth the humane body into so many Sections, and then judgeth of them.

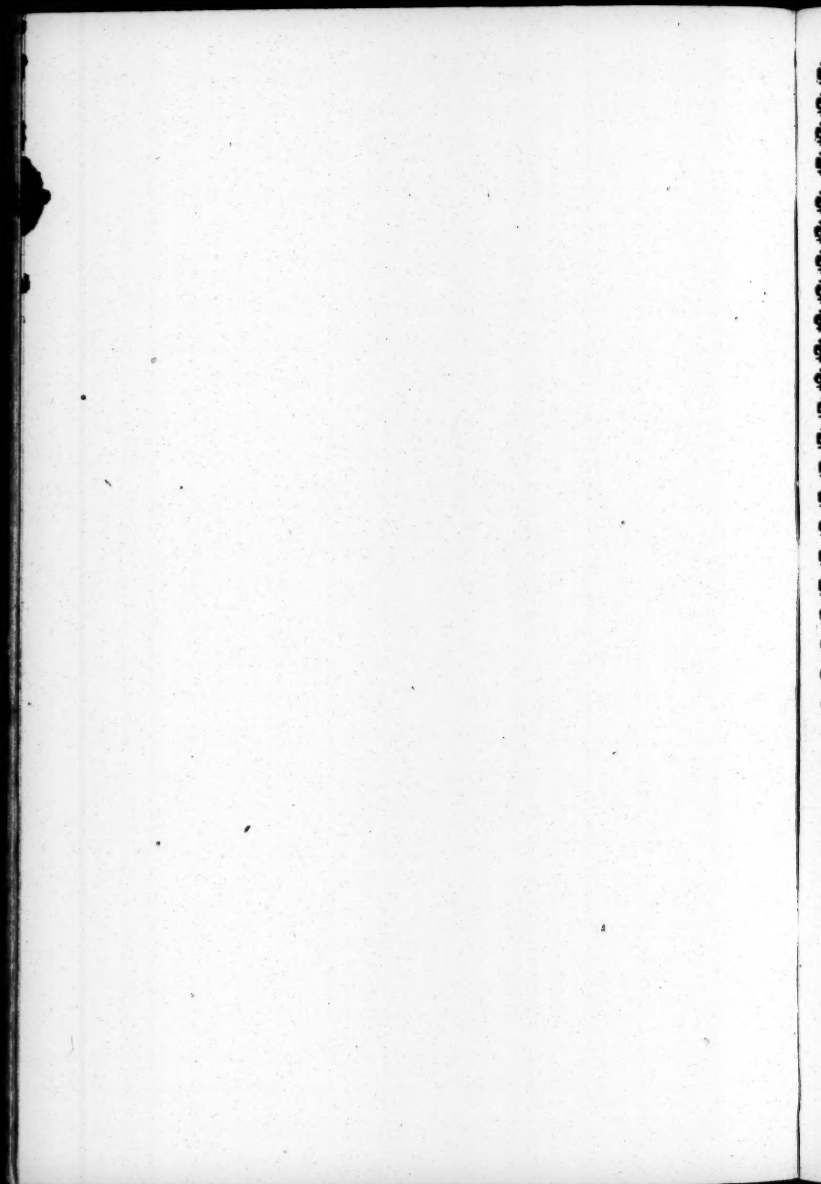
Courteous Reader,

I Have only inserted these two passages, and late inventions, that those who are curious Students in this way, may in prosecution of these new Discoveries, confer the
Ancient

*Ancient and Modern Practises together,
being promised (if God please to afford my
Friend life and health) in a very short
space, to inlarge these Observations, and
Novel Inventions, into a more full, and ex-
act Method. In the mean while I shall de-
sire my gentle Reader to take these Offers,
as they have been presented unto me, in as
good part, as I have freely published them*

Farewell.

Place this after folio III



A
DETECTION

Of some Faults in

Unskilful P H Y S I T I A N S,
Ignorant and Careless A P O T H E -
C A R I E S, and unknowing
running C H I R U R G I A N S.

*Written by a Doctor of Physick in Queen
Elizabeths dayes.*

And also a Translation of *Papius*,
concerning *Apothecaries*,
Usefull for all sorts of People.

L O N D O N,
Printed by G. D. 1651.

A

DETERMINATION

OF THE

UNION OF THE

PEOPLE OF THE

UNITED STATES

AND THE

PEOPLE OF THE

WEST INDIES

AND THE

PEOPLE OF THE

WEST INDIES

AND THE

PEOPLE OF THE

WEST INDIES

AND THE

PEOPLE OF THE

WEST INDIES



TO THE READER.

Courteous Reader,



S the Books came to my hands, I have presented them faithfully to you. If you accept of them, I shal account my labour well bestowed, intending it for the publike good; If otherwise you are offended at him that bestowed them on me, he desires you would be pleased to present something of your own better; may oblige him and others to thank you for it; I thought fit lastly, to acquaint you that, since my fitting of Record this second time for the Presse, lighting by the help of a Friend, upon these two other Peeces: The one, *A Detection of some faults of unskilful Physitians; Ignorant, and Covetous Apothecaries, and Unknowing, Running Chir-*
I 4 *rurgions;*

To the Reader.

rurgions ; Written by a Doctor of Physick in Queen Elizabeths dayes ; a Book out of Print , and almost knowledge : I thought fit to put again to the Presse, as reprovving the too frequent abuses of these times : And also a translation of Papius concerning Apothecaries : Encouraged the rather, since the publishing of that translated, or rather transverted Dispensatorie by that Sapientum Octavus, Culpepper; wherewith I have presented, as it came to my hands, a carforie passage (by some Well-wisher to that Honourable societie of Physitians,) prefixed before his translation ; Intituled, The Translator to the Reader.

Curteous Reader,

THere is a Book lately put forth against Anthropotopia. It is conceived the sum of the whole Book, collected from what is scurrilous, and unworthy of an Academician, may be comprised in little more then a sheet of Paper, whereby you may conceive how much the Author burtheneth the Readers patience with superfluous trash ; He is much troubled with Sendivogius, and Anonymus ; Books, I beleeeve, his capaciy never yet understood, and for his being graveld at what is wrote against Aristotle, hee will
finde

To the Reader.

finde it a greater task to answer Biffon, Gassendus, or Van Helmont in what they have taxed him, then to write Invectives without discretion. Concerning Mr. Culpepper, he saith, He that looks on a game, may see as much into it, as he that playes ; 'Tis true, if he well knows the game, but you have plaid your game with the Physitians, and though your Gentilitie be not questioned, ingenious men will give you the Epithite of Eques male moratus, though not according to Riders interpretation of Eques at Cards. You say the Liberty of our Common-wealth is most infringed by three sorts of men, Priests, Physitians, Lawyers ; the one deceiving men in matters belonging to their souls, (if your father were a Priest as is related, why might not he do so) The second in matters belonging to their bodies, (hardly not more then you by your Dispensatorie) The third, in matters belonging to their Estates (you are reported to have tryed some other Professions,) but only fasten on the Rayler. Physitians you say walke in the clouds, and thats the reason men are led by the noses : 'Tis strange men in the clouds, should lead men below by the noses ; but you have as visible a piercing eye to see that, as you have into Physick : But they are led by
a com-

To the Reader.

a company of proud, insulting, domineering Doctors, whose Wits were born five hundred yeeres before themselves; 'Tis a pretty riddle a mans wit should antecede him five hundred yeers: If your own went but half so long before you, I should beleeve they would hardly gallop up to one another, and you scarcely wiser, in five hundred yeers subsequent: But some have wasted whole Estates in Physick (it hath certainly been with such wise *Æsculapians* as your self,) though I scarce beleeve any wiseman would fool out a groat on your judgement. It is unhandsome and unbeseeming, you say, to see a Doctor ride in state in Plush with a foot-cloth, (envie not their merits.) When a Translator may be trusted with his own government, and writes any thing *Dignum bono viro*, he will be commended *servum Reipublicæ*: but they dare not visit a visited house, not for that they fear themselves, but because they would not fear others, whose lives may be in as great danger: But you think you have paid them with two Proverbiall Verses, when the Patients ingratitude, when they are restored, may rather keep them away according to this Verse:

I.

2.

3.

Angelus adventu:

Cura Deus.

Exitu Abbadon.

Con-

To the Reader.

Concerning Physitians in Italy and Holland, they have State-allowances, but if our Eques can regulate no better, between allowances, and non-allowances, you will never bee made a Justice for equall distribution. But in the Colledges Epistle, the not quoting of the vertues of the Receipts is objected against them, but his Wits had never quoted them, had not more ancient wits afforded him their light, though but a dark one to guide him. You say if Apollo had served the nine Muses, as they serve their Apothecaries, they would have had no more wit then nine Geese. I wonder whence the rare bird, or rather the feather of an Apothecary, (for he was not fledg'd when he deserted the trade) aspired to this height to be able to teach the Physitians, whose Books he is not worthy to carry, unlesse as an Ass carrieth meat for his Master, and for himself: He had rather be Disciple to Zoilus, then Apollo. He saith, The Nation are all already Physitians: If their own opinion have not made themselves so, your opinion labours to do it, with a grain of your selfe-conceited understanding; But all the Ancients wrote in their mother tongues, and native languages, (but not all their works by his leave) yet all the people were not Physitians,

To the Reader.

sitians, neither in Arabia, Grecia, nor Germany; and both in Physick and Arts, they retain their Greek and Arabian names to this day? And concerning their Doses, how uncertainly they have delivered them, a searching man may easily discover; You had need colloque with the terme of worthy Countrymen, when you tell, the Colledge doth in effect say, they are great fools: but you would make them fit for the calling, if scurrility could fasten it on them.

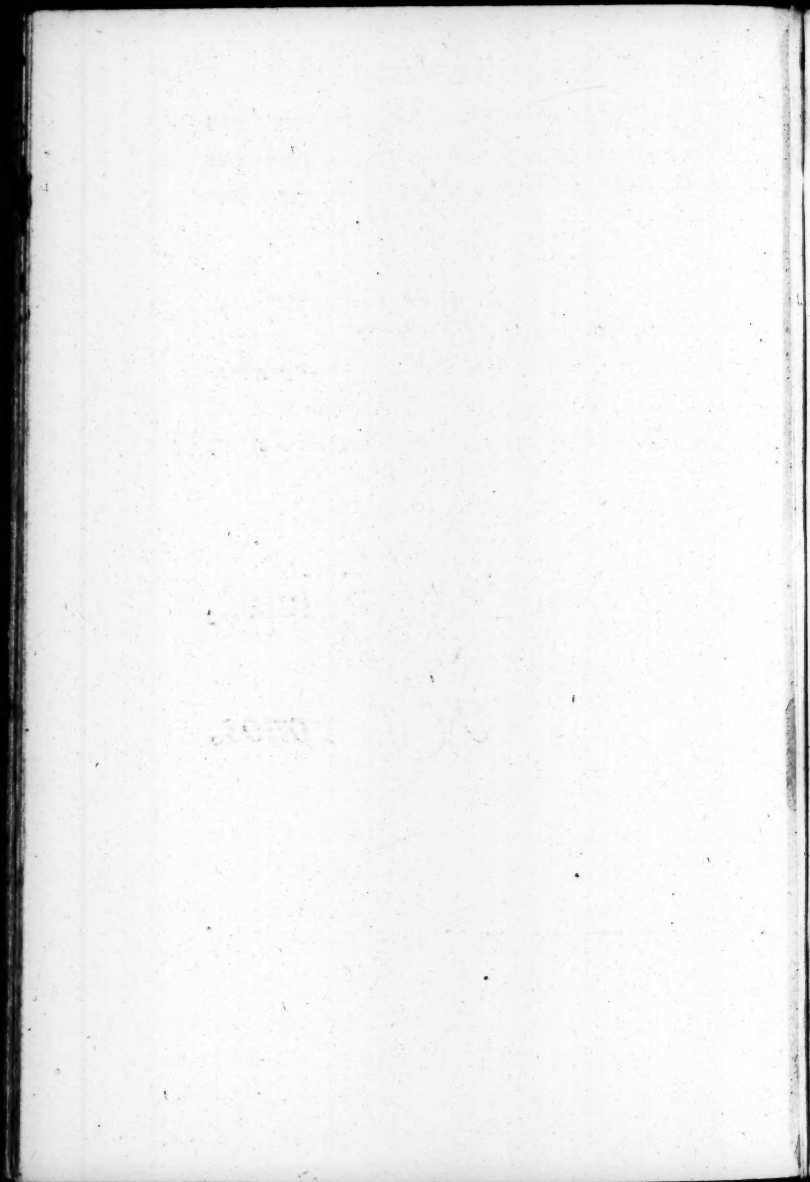
*The Apothecaries you say, would deserve the name of a company of Dunces, if they should complain against the Physitians, and not connive for their trade; but had my Gentleman gone out a Freeman in the profession, the Doctors would have been so bold with him as to have examined his sufficiency, as they do others, before they passe their approbations for practise: You call Heaven to witnesse, none of the Colledge have provoked you; Whence comes this bitterness then undeservedly against them, but from (as you write) the Saturnine disposition you were born under; you Astrologers, write, some Planets are evil in themselves, yet joyned with some others, qualified with their conjunction are better affected, though Scripture teach you, when God had surveyed
all*

To the Reader.

all his works, they were valde bona, and you can produce no place where ever the heavens were cursed. But to conclude with the Gentewomens. favours who must not be forgotten : You present the beginnings of your labours at their feet, in your low humility, with an Herculean undertaking to open unto them this famous, though too much abused Art of Physick, and so conclude with as much Arrogance, as you began with Folly :

Your Friend,

Nisu bonos.





A
DETECTION
OF
UNSKILLFULL
PHYSITIANS.

The First Part treateth of divers and sundry Errors, and Abuses, of the unlearned and wicked sort of Physicians.



That Excellent man and Great Clerk *Aristotle*, who for his incomparable doctrine is of all Learned men named the Prince of Philosophers, hath this saying in the seventh Book of his *Ethicks*: *Non oportet tantum verum dicere, sed etiam causam falsi assignare*, that is, A man may not only tell the truth, but he must also shew and declare the cause of falshood and error. As who should say, The truth can

can never so well appear, as when it is compared to his contrary, which is error, lye, and falshood. *Quia opposita semper juxta se posita, magis elucescunt* : Contrary things set one against another, are alwayes a great deal better known.

The Philosophers of ancient time as it appeareth plainly in *Aristotle* and *Galen*, yea, and in the holy Doctors of the Church, In many of their works had in a manner more adoe to confute the false errors, sophistrie and cavillations that were then used, and imagined as true doctrine, then they had to write the very truth it self. The great mercy of God had never been so well known, if the fall and transgression of man had not been. And as *S. Paul* saith in the 5. Chapter to the *Romans*, *Where sin hath exceeded, there grace hath the more exceeded.* And Christ in *Lu. e 7.* said of *Mary Magdalen*, *Many sins are forgiven her, because she loved much.* Now therefore before I speake of the abuses and enormities of Physick, First, I will shew and declare, What is the part, office, and condition of a good Physitian. Thus doing, I will first alledge *Hippocratis Jurjurandum*, that is, the Oath that *Hippocrates* would that every Physitian should take before he practise any
Physick

Physick. I will not recite the whole Chapter, but the chiefeſt part. *Caterum quod ad agros attinet ſanandos, &c.* The Engliſh is this : And as concerning the curing of the ſick, I will ordain and deviſe for them as good a diet as ſhall lie in my power and judgement. And I will take heed that they fall in no damage nor hurt. Nor yet any mans prayers ſhall ſo much prevail with me, that I give poiſon to any man, neither will I counſell any man ſo to doe. Likewise I will give no manner of medicine to any woman with child, to deſtroy her child. Moreover I will uſe my life and ſcience godly ; I will not cut thoſe that have the ſtone, but I will commit that thing only to the Chirurgions. In what houſe ſoever I ſhall come in, my coming ſhall bee for the Patients commoditie and profit. And I will refrain willingly from doing any hurt or wrong, and from falſhood, and chiefly from venereous acts, what kind of bodies ſoever I ſhall chance to have in cure, whether it be of men or women, of free or bond ſervants. And whatſoever I ſhall ſee or hear among my cures (yea although I be not ſought, nor called to any) whatſoever I ſhall know among the people (if it be not lawfull to be uttered, I ſhall keep cloſe, and keep it as

a Secret unto my self. Again the same *Hippocrates* saith in the Book or Chapter called *Lex*. (Toeschew tediousness I will leave the Latine) Whosoever saith he, will truly get him the knowledge of Physick, he must satisfie his mind, and as it were be accompanied with these guides, with nature, science, a place meet and convenient for studie and learning, an institution from childhood, a labour and painfull diligence with a long time.

Item, In his Book *De Medico*, he saith, The Physitian must be of a good colour, and comely countenance, and of a good disposition of the body, he must also be had in estimation among the common people, by comely apparrell, and by sweet favours (so that he be not suspected of too much excessse) for by such means the Patients are wont to be delighted.

In like manner, the Physitian must see and studie, that he be of a modest and sober mind, and not only concerning modest talk, but also in other things concerning his behaviour, he must be well disposed; for there is nothing that getteth a man better estimation and authoritie then to be endued with an honest life and good manners. His countenance must be like one that is given to studie

studie, and sad, and yet not overmuch, for so he should be taken to be stubborn and scornfull, and like one that disdaineth other mens company : but on the contrary, hee that hath alwaies a laughing countenance, and is given to too much gesture and mirth, is taken for a leud person; and therefore this must needs be eschewed : Also he must be just and bear himself upright in all his business and affaires, &c.

In his Book *De decenti ornatu*, he saith, *A Physitian being a Philosopher is equall in some respects unto God.* Item, it is decent that the Physitian be gentle and courteous, for rudenesse and churlishness are greatly mistiked, as well of the wholeas of the sick. He must often visit his Patient and be diligent. He may not declare all things to his Patient, but some things he must keep close from him, and must comfort him with a lively and merry countenance. And sometimes to withdraw him from his fond desires, he must rebuke him, in resisting with sharp words ; and sometimes again he must intreat and comfort him, with a dexteritie and gentle perswasion. And yet notwithstanding he may not alwaies tell him of his present state, nor what shall become of him.

Thus much I have brought out of *Hip-*
K 2 *pocrates*

pocrates to testifie and declare the office and condition of a Physitian. Now something will I bring out of *Galen*, who in his Book intituled, *quod optimus medicus idem est & Philosophus*, declareth plainly by the very title of the Book it self, what learning a Physitian ought to have. He saith also in his Book *De Antidotis*, That a Physitian if it be possible ought to have the knowledge of all herbs, it not, at the least he ought to know those which be commonly used. Again in the Commentaries upon the first Book of *Hippocrates*, *De morbis vulgaribus*: The Physitian, saith he, ought in any wise to have a respect to profit and help his Patients, and if he cannot, then at the least wise that he hurt them not.

Item upon the 6. Book *De morbis vulgaribus*, he saith, Albeit that the Physitian be gentle and courteous, sober and also merry, yet neverthelesse he ought not to minish his gravitie, for unless the Patient have in reverence and estimation his Physitian as a god, he shal never follow and obey his counsell, it will be therefore very decent, that the Physitian do not so abase himself and flatter, that he bring himself in a contempt.: Nor again, as it were another *Calianactes*, shew himself hoggish and rude. And that shall

shall he easily bring to passe, if in his countenance and talke, and all his honest behaviour, he retain the gravitie of a Physitian: and so do perswade his Patient to follow and keep those things that he appointeth and ordaineth for him.

But now least I should bee too tedious in alledging many Authors; I will come to those of our time, and namely I wil bring that man of high learning and famous memory, Master Doctor *Silvius*, who sometimes was the publike Reader of Physick in the Univerſitie of *Paris*, having daily at his Lecture little lesse then a thousand Auditors (or as they call them, Scholers) of the which I being one, may plainly testifie it to be true. The same *Silvius* saith in his Book, *De ordine legendi libros. Galeni & Hippocratis*, That a good Physitian must have all these properties.

First, he must be naturally bent and given only to truth, all the dayes of his life, he must be circumspect, discreet, and of a good pregnant wit and memorie.

Secondly, he must have a sound and healthie bodie, and must be able to abide great pain in studying.

Thirdly, he must be endued with great riches, or at least he must have sufficient to live by.

Fourthly, he must have and get his learning of the best learned men of his time, who diligently even from his childhood must instruct him with these sciences : Grammer, Logick, Musick, Astronomie, and chiefly (as *Plato* counselleth) Arithmetick and Geometrie, and also Philosophie.

Now to come to my chief intent and purpose, and (as they are wont to say) to the Principall : These things above rehearsed, well weighed and considered, what hope may there be conceived ? what foundation and stay may be had ? yea what security and safeguard is there in these sort of fellows, which now a dayes almost in all places so rashly, so fondly, and so wickedly do abuse the noble Art and Science of Physick. Where is their great and manifold knowledge of the tongues, of the liberall Sciences, of Philosophie, of Anatomie, of the Simples, of the compound Medicines, and of the Temperatures or Complexions ? where have they studied ? of whom have they learned their Science ? (if I may call it a Science) what Authors have they seen or read. Many of them will answer and say unto me thus : Sir, although we have not this exquisite knowledg that you require in us, yet we have had experi-

experience of many things, we have English Books enough to teach us divers medicines for divers purposes, yea and some of us have a gift of nature to heal many diseases.

I answer, that your reasoning is fair, but it is grounded upon a very slender and feeble foundation. For first, as touching your experience, how can it be good unless it be joyned to knowledge and science? What though you have given a Medicine: As for example, a purgation to purge steame to any man in the Winter, supposing that man to be somewhat aged, of a flegmatick complexion, using much flegmatick meats, much sleep and much rest: and that the said Purgation hath taken good effect and wrought well, all this supposed; Let the like medicine be given in the Summer to a man of another complexion, of another diet, and of another age yea supposing this, that it bee given to the selfe same man in the Summer; Shall the same Purgation (thinke you) take such effect and operation, as it did afore in the winter? no verily; or elle *Hippocrates* that ancient Father and Founder of all Physick (whose sayings and writings we follow and credit, *tanquam Apollinis oracula*) should have

fouly erred, and specially in his Book *De Natura Humana*.

Galen in his third Book, *De methodo medendi*, saith, That there be two instruments of all manner of invention, that is to say, Reason and experience. He that knoweth a thing that is invented and found by experience, and yet cannot tell the reason of it why it is so : plainly declareth to know it only by experience. But that hee may understand how much he erreth, let him give ear unto me a while, for I mean to talk a few words with him, which follow only experience. Thus much *Galen*; what hee saith after, I leave it, lest I bee too tedious.

The same *Galen* also upon the first *Aphorism* of the first Book of *Hippocrates*. The experience (saith he) of Physick is dangerous, (which be also *Hippocrates* words) for the materiall subject of Physick is no tile stones, or common stones, dirt, wood, or leather, as they are of other crafts and sciences, in the which you may make or mar any thing without danger. For if you spill a peece of wood or leather in mis-handling it, there is no danger, but onely a little losse or damage, which is soon recovered again by diligence. But to prove things in mans bodie which bee not afore approved by learn-

learning and experience, is not without danger of death.

Now as concerning your second reason, by the which you affirm to have many English Books that teach you Physick: I answer, that the English Books teach nothing of the true foundation of Physick. For if there be any that do it, how can it be well understood without Logick and Natural Philosophie. For *Aristotle* saith, *Ubi desinit Physicus, ibi incipit Medicus*. A man must first peruse Naturall Philosophie, before he enter into Physick.

I doe not deny but to have some Books of Physick in English, specially of the Simples, well and cunningly set forth for Chirurgions, Apothecaries, yea, and for sober and wise men that delight to read in such things, and know not the Latine tongue, is not unmeet nor hurtfull. Although I would not wish, nor it is not decent, that either Chirurgeon or Apothecarie, or any other man, being no Physitian should practise or use any inward Medicine without the learned and approved Physitians counsell. For as the two Proverbs say; *Falcem ne mittas in messem alienam, Et ne sutor ultra crepidam*, let no man meddle with another mans corn, but with his own. Let the Shoemaker meddle with his shooes. But

But to the purpose, doe you think to have in your English Books, all the perfect knowledge that is required in Physick? Yea, have you the tenth part onely? We could never have it yet in Greek and Latine perfectly (notwithstanding we have it now better then ever we had before) how then should you have it? If English Bookes could make men cunning Physitians, then Pouch-makers, Threshers, Ploughmen, and Coblers might be Physitians as well as the best, if they can read.

Then were it a great folly for us to bestow so much labour and study all our life time in the Schooles and Universities, to break our braines in reading so many Authors, to be at the Lectures of so many learned men, yea, and the greatest folly of all were, to proceed in any degree in the Universities with our great cost and charges, when a Sir *John Iacke* Latine, a Pedler, a weaver, and oftentimes a presumptuous woman, shall take upon them (yea, and are permitted) to minister Medicine to all men, in every place, and at all times. *O tempora! O mores! O Deum immortalem!* To what purpose have the Universities been erected and founded in times past? To what purpose have they so many goodly privileges

ledges granted unto them of all Princes, successively from all ages? what doth it prevaile for us that be learned to proceed (as I said) in any degree of Master, of Batchelour, or Doctor, and so to be allowed and have authority to use our Science? when every man, woman, and child that list, may practise and use Physicke (*idque impune*) as well as we? and so, many times not onely hinder and defraud us of our lawfull stipend and gaines: but (which is worst of all, and too much to be lamented) shall put many in hazard of their life, yea, and be the destruction of many. Is this tolerable? Will the Magistrates alwayes wink at this? Shall there never be no reformation for such abuses? God of his great mercy grant that once they may be reformed. For if they be not, verily it will greatly discourage men of learning hereafter to apply themselves to the study of Physicke, whereby the helpe, succour and safeguard of many a sick man, woman, and childe, shall be hindred and secluded: yea, and many shall fall in danger, and be sick, which otherwise might be preserved from all sicknesse by the right ministry of Physicke. For Physick is appointed not onely to expell sickness, but also to preserve the body in health.

But

But now to the third part I answer : You say, that you heale many times by the gift of Nature : I pray you tell me what you meane by Nature. Perhaps you understand by Nature, a naturall inclination or disposition, given by the influence of Starres and Planets, (as I doe not deny, but that we may be the better moved and inclined to any Art by their influence) yet is it not a meer gift, but onely a disposition, and as it were a dexterity and naturall towardnesse to healesome kind of disease : which thing notwithstanding is oftentimes done more by chance, then by any certaine Method, or Reason. For verily, have you never so good a wit, disposition and inclination to any Art : yet if you apply not that Art, and exercise your selfe in it earnestly, and continually, and specially in this Science of Physick (which can neer be well used without great study, and the knowledge of divers other Sciences, as I have said before) your doings shall be but rash, vaine, and of small effect. For as the Philosopher saith: *Scientia nobis, non innascuntur, sed acquiruntur*, The Sciences are not infused in us at our birth, but are gotten afterward : And Science is thus defined in Logick : Science is an habit, (that is) a ready, prompt and

and bent disposition to doe any thing, confirmed and gotten by long study, exercise and use. Therefore the naturall inclination by the influence of the Starres can profit but little, unlesse you apply your selfe with great diligence and study to that kinde of Science or Art that you intend to practise and follow.

But if you understand (by Nature) God : I say plainly, that God doth not give the gift of healing to any wicked people, but onely by a speciall priviledge to those onely that be of a most pure, sober, and holy life, as we read of the Apostles, and some of the Prophets. And as Saint *Paul* saith, in the first Epistle to the *Corinth*. the 12. chap. *To some is given the gift of healing by the Holy Ghost.* So that to heale by this manner of means, is not commonly to use Herbs, Rootes, or any other drougs bought at the Apothecaries shop, or to take any money or other reward for the healing. For this kinde of healing is the meer gift of God, working in those (to whom it pleaseth God to give it) without any labour or study. We hear of none now a dayes, that hath this gift of nature (I mean of God) saving onely the Kings of *England*, and the French Kings, which, as the excellent Doctor *Targautius*

gaultins faith, in the first book of his Chirurgery, have a speciall gift to heal the Kings Evil, called *struma* in Latine.

Therefore I conclude, that howsoever you make your argument, your profession and practise in Physick is nothing worth, but rather is false, deceitfull, unjust, unlawfull, and not any longer to be suffered.

I could now, if I were not too tedious to the Readers, bring and alledge out of the Authors of Physick, certaine notable examples of many rash and dangerous cures, that hath been done by many ignorant and lewd persons in times past, if it were not that the dayly examples appeareth (alas) too much before our eyes in these our dayes.

I will say nothing now of the City of *Salisbury* where I dwell, what abuses hath been, or be there now, concerning the Art of Physick. A reformation hath been made there, not very long agoe, as touching such matters, but yet all things are not so well brought to passe as I would wish, and as I thinke good they were. I delivered once, certaine Articles concerning the honest and lawfull use of Physick, unto the right reverend father in God my Lord Bishop of *Salisbury*, which Articles being (at the least

least in my judgement) good and lawfull, if it would please his Lordship, yea, and all other most honourable Bishops, each of them in his Dioces, to admit and put in execution. I would suppose, *imo*, I would beleeve that Physick should be better and more honestly, truly and justly used and ministred then it is now in these dayes.

And because that I would that every man should see and know, what Articles they be that I delivered, I have thought it good to take a copy of them (which notwithstanding I have somewhat altered) and rehearse them here in order.

*Seven Articles concerning the ministration
and use of Physick,*

The First.

It were very meet, expedient and necessary that no Physitian should practise Physick in any Dioces, unlessse he were first allowed by some University: or at the least having sufficient learning in the said Science, he were allowed and licensed by the Byshop or his Chancellor in that Dioces wherein he dwelleth,

The Second

It were good and necessary, that no
Chirurgion

Chirurgion should practise his Chirurgery, unlesse he could read and write, and had knowledge and experience in the simples belonging to his Art. And that he presume not to let blood or undertake any hard cure, without the Physitians counsell, if he may conveniently have it.

The Third.

That no Apothecary should minister of his own head, or ordaine any purgation or other composition of Physick for any man: or that he should prepare and make any purgation or notable confection, without the Physitians advise and counsell, unlesse that the Physitian had first seen and viewed the Ingredients, whereof the compositions are made, and specially the purgations.

The Fourth.

It is not decent nor profitable for the Common-wealth, that any ignorant lewd or ill suspected person, be he man or woman, should be suffered to make, sell, or minister Medicines to any body, but that such kinde of persons (being duly examined and convicted by the learned Physitians of the Dioces) should have condigne punishment appointed them.

The Fifth.

That no Physitian doe take upon him the name of any degree of Schoole, as Batchelour, Master of Art, or Doctor: or cause and permit any writer, or Printer so to terme him, unlesse he can approve it to be so indeed by any University.

The Sixth.

That no Midwife should disdaine to come to aske counsell of the Physitian, as often as any woman being in labour of childe, is in danger. It were good also that the Midwives were first sworne, before they take upon them their office.

The Seventh.

It were also good and expedient, that (as the use of London is, granted by an Act of Parliament) that the Physitians in every other Dioces, one, or two, or more, should have licence, to search and view the Apothecaries shop once a yeer at the least, and see whether their stuffe and Medicines be good and lawfull or not.

These Articles above rehearsed, I thought good here to alledge, (although under correction of my superiors) because that some occasion may be given to reforme the enormities and abuses in the Science of Physick. And here let no man thinke, that I meane

to speake any thing in any point against the priviledges and liberties granted by an Act of Parliament to the Company or Corporation of the Physitions of *London*, for I mind not, nor may not meddle with their priviledges.

Many there are, that beate themselves very stout, upon an Act that was made by King *Henry* the 8. in his daies, affirming that Act to make full and wholly in all points for their purpose, but they are fouly deceived and farre beyond the marke that they shoot at. For whereas the Act presupposeth in them a knowledge of the simples, as of herbes, rootes, and waters, and of the vertue and operation of them. Alas, they can scant tell what a simple meaneth: There be a great number of them that knoweth not these common Herbs, *Buglossum*, *Apium* & *agrimonia*, for in stead of *Buglossum*, which is Bourage, they will take Buglose, being deceived by the sound of the word: for *agrimonia* the true *Eupatorium*. They will take *Eupatorium Mesue*, which is described of *Dioscorides* under the name of *ageratum*, for *apium* Parsly, they take commonly Smallage: for *Scolopendria*, called otherwise *Ceterach*, they abuse Harts-tongue. And to be short, I my selfe have
seen

seen some Apothecaries take for the root of *Rubia*, the leaves of *Rubus*: for the root of *Mandragora*, the root of *Gentian*: for *Hematites*, *Amethystus*: for *Sempervivum minus*, the Herb called *Thrift*, or great *Stonecroepe*, they have taken little *Stonecroepe* in making their *Populeum*.

To the purpose, whereas the Act presupposeth a speculation or practise, they practise at a venture a thing which they know not, whether it be cold, or hot, dry, or moist.

Item, whereas the Act giveth them licence to minister Drinkes for the Stone, Strangury, and Agues: They know not the Stone in the back, from the Stone in the bladder; neither whether the stone may be wasted and broken by Drinkes and Powders, or had out by incision. Moreover, they know no difference between a Colike and a Stone: for they name them both one, whereas they be two sundry diseases.

They know not what *Stranguria* is, nor how many manner of wayes it may be engendred in the body.

They can scant discern a Tertian Ague from a Quotidian. As for the mixt and complicate Agues, they know not what to make of them; They call them new

diseases, because they can give them no other name.

Now verily, if these jolly fellowes had but that knowledge onely, which the said act presupposeth them to have, it were not so great a danger, if they sometimes were permitted to give some medicines for the foresaid diseases. But I pray you, how many of them have that little knowledge? which knowle dge is but little indeed in comparison of many other sciences, which be not only profitable, but also necessary to attain the noble Science of Physick. If the other Acts which have been made for the Reformation of Physick, be well scanned and conferred together one with another, it shall plainly appear, that the aforesnamed act, shall not make so greatly for their purpose, who by ignorance and rashnesse do use to practise Physick at their pleasure.

Verily I much marvell at one thing, that many which be of the higher sort, repuring themselves to bee of no small gravitie and wisdomẽ will sometimes give credit to such leud persons, counterfeiting the Physitians. Indeed, I suppose that they be partly deceived by the vain perswasions and fair flattering speech of such fellowes. Their communication is so fair, sweet, gentle

tle, pleasant and amiable; and their promise and warranting so earnest and great, that they will go nigh to deceive the wisest man that is; if he have not the more grace, and be very ware of them. And the better to allure the simple people unto them: They will say to him whom they do take in hand; Sir, I will none of your money now untill you be whole, I will have money of you only for the medicines which I must occupie for your disease. They will lightly warrant every man to heal him, of what disease soever he hath; and for all diseases they have commonly but two or three sorts of medicines, and yet most commonly they be Purgations or Vomits.

They purge so much and so often, that they purge many times, as well the soul out of the body, as the money out of the purse.

Moreover, these fellowes will also (to have the more credit given unto them) name themselves after some great learned mans name. Sometimes they faine themselves to be of some strange countrie, and will counterfeit their language (as I know one in *Salisbury*) and look to be called by some name of dignitie or worship; as Master, Gentleman, Domine, Doctor, and all to deceive the people.

O, I would wish that every man would

take heed, and I beseech God that every man may beware of such false Physitians, which may be likened to Wolves or Foxes, clothed outwardly with lambs skins, but inwardly are full of subtilty and deceit. Many perish through the yeer at their hands, whereby the good science of Physick is brought into an obloquie and reproach.

Many learned Doctors of our time have in their works envied greatly against these abuses, and have wished some punishment to be established by the Magistrates, unto such as wickedly and without all reason misuse and practice this Science.

Here I could also somewhat touch some of the learned sort, which although they bear themselves never so stout, and appear to men to do all things well, yet nevertheless, they halt sometimes on both sides: They see and know many abuses in the Apothecaries shops, and yet they winke at the matter, and are loath to displease the Apothecary, who perchance is their friend. But the Proverb saith; *Amicus Socrates, Amicus Plato, Amica tamen magis veritas*. The truth ought to take place in all things, and above all things.

There be also many Physitians that think themselves so profoundly learned, that they
believe

believe that no man is able to match with them in learning, they be so arrogant and scornfull, that although the Patient be content to have the counsell of two or three other Physicians to consult and confer together of his disease, yet they will not willingly grant to it, but rather disdain to conferre with any other, the which perchance are sometimes a great deale better learned then they are. They remember not what Hippocrates their Master saith, in his Book *De preceptionibus*, who being in Latine translated saith thus, *Nec vero indecorum se illeget medicus, &c.* The English is thus, That Physician shall not do amisse, nor behave himself uncomely, which being perplexed in the business about his Patient, and doubtful for want of perfect knowledge, doe cause other Physicians to be called, that by common deliberation, and conferring one with another, the Patients affairs may be duly examined and known, so that they may be as co-adjutors (that is to say, helpers one to another) to provide for some remedy. Some there be also (lest that other men should learn their cunning) that will rather scribe them a Recceit, and will make such dashes and strange abbreviations in their Bills, that their writing

seemeth rather to be Arabick, or like the the writings of the *Cabalists*, then Latine. I fear me that they that write so, are ashamed of their own occupation, and fear lest that if they should write plain, their errors and faults should be espied. He that is a plain man will deal plainly, will speak plainly, and write plainly.

Some there be also that be so stiffe necked and heady in their opinions, that they will be of no man gainsaid in any wise, no, and if you bring them never so good a reason, although you alledge them never so many authorities.

But I say, *Plus vident duo oculiq; unus.* All the wit of the world lyeth not in one mans head. Therefore to conferr together upon a matter, it doth oftentimes great good; and no man (be he never so well learned) ought to refuse it, as often as time, place, or any other occasion shall serve.

Also some Physicians there bee, that bee so greedie, and of such an unsatiable desire, that they care not in what danger they cast themselves, what shame and damage they sustain, so that they may have many cures, where sometimes one would suffice them well enough, and be more perchance then they can well bring to passe. They

They be so covetous that they would have all, and do all themselves, and they envie many times at other honest men having cures, when they have none. Thus doing, verily, they bring themselves in great contempt and doth as it were abate and blemish the honourable Science of Physick, which requireth rather to be sought earnestly with great sute, with humilitie, reverence and praying, then to be offered, and as it were objected indiscreetly to every man, and in every place, like a blind Harpers song, or a Pedlers pack. The common Proverb saith, *That offered service stinks*. And I have heard oftentimes say, That Physick unless it be earnestly sought and well paid for, it will never prosper nor work well with the Patients: I mean not by this that the Physitian must be alwayes liberall and mercifull to the poor, on whom his living dependeth not, but on the rich.

Now to conclude and finish this first part, I will leave to intreat any more of Physitians, (except as occasion shall serve) and now in the next Part following, I will speake of Apothecaries, and touch somewhat their abuse and negligence.

Whosoever will read any more of the tokens and qualities of foolish and blind Physitians;

A Detection of

Physicians; Let him read a little Book of mine, Printed many yeers since, which is Intituled: **A Great Gallie** lately come into *England*, out of *Terra Nova*, laden with Physicians, Apothecaries, and Chirurgeons, &c. made in form of a Dialogue.

A



A
DETECTION
OF SOME
IGNORANT
APOTHECARIES.

*The Second Part treateth of the ignorance
and presumption of certain Apotheca-
ries.*

IT is not unknown to many men,
and specially to those that bee
truly and exactly learned in
Physick, that there hath been,
is now, yea and shall be (if some good or-
der be not taken) great abuses among A-
pothecaries, in handling, keeping, choosing,
and dressing their Drugs and Medicines.
Insomuch that it is suspected of most part
of men (and I pray God it be not so in-
deed)

deed). that among all other mechanick Arts or occupations, the greatest and most crafty deceit that is, or may be in Apothecaries. Howbeit, I am not ignorant, but that within these few yeares, some Apothecaries, by the helpe and counsell of good Physitions, have gotten and provided them better stufte and simples to make their compositions, then they were wont to have afore.

And I beleeeve verely, that if every Apothecarie would endeavour himself to buy no stufte, but that should be pure and good : there would be a great many, that would give better credit to Physitions and Apothecaries, and have a better hope in them, then they have now a dayes, and all because they mistrust and suspect so much the Apothecaries stufte and confections. Indeed, as covetousnesse is the root of all evill, so many Apothecaries there be, that more for lucre sake and greedinesse of worldly goods, doe prepare their Medicines, then for any care that they have, to deale truly with the poore Patients and sillie soules that be in paine, The Physitian many times shall ordaine his counsell, and appoint certaine Medicines for his Patient ; which Medicines he knoweth certainly shall doe him good, being taken and used according to his counsell, yet the
same

same Medicines being taken and bought at the Apothecaries, and made many times of naughty stuffe, or not well prepared, shall not only doe little or no good at all; but shall also sometimes put the sicke body in hazard of his life, whereby shall no small trouble and shame redound unto the Physitian, and yet was he not the occasion thereof, nor in any fault at all. Some perchance will alledge against the Physitian, that he may be in the fault, forasmuch as he ought to have seen the stuffe first, whereof the compositions are made, and ought also to have been at the making and preparing of the Medicines which he ordaineth.

Indeed it ought to be so, if all things went well, and specially if the Apothecarie be suspected to have somewhat a large conscience, or that he be of a slender learning and negligent, and passeth not what he doth so that he may receive money. But you must understand that the Physitian cannot alwaies be present at the making or delivering of such Medicines as he hath appointed. For sometimes he hath no Patients to look to then one, and perchance he may be twenty or forty miles from the Apothecarie, when he sendeth his Bill to him, and therefore cannot be present.

Many

Many other occasions there be, that letteth the presence of the Physitian at the making and delivering of medicines.

We had a sad passage of an Apothecary of late yeers, who being prescribed by a Doctor to make up some Trochises for his Patient of *Gordonius*, not having them ready, used in their room Trochises of *Al-hohengi in opio*, which the Patient took, and dyed within few houres after; whereupon the Widdow of the deceased Patient, instigated by some of her friends, prosecuted the said Apothecary; first for life, and secondly, to prohibite him for further using his trade, with two severall Bills and Inditements at the Kirgs Bench Bar, before that Learned and Reverend Judge, the then Lord Chief Justice *Brampton*, where with much charge he was acquitted, in both the severall Trials.

But if the Apothecarie be an honest man, of a good conscience and learned; or that he hath such a one under him to serve the shop, that is of like qualities, It is not then so greatly necessary for the Physitian to be present, so often as he ordaineth his counsell for any Patient. For even as a good tree will alwaies bring forth good fruit: So will a good Apothecary make and deliver

ver nothing at any time, but that that is lawfull and good. But this Question (if a man might be so bold) I would fain ask how many good Apothecaries be there in *England* ? how many do their duties as they ought to do ? how many are learned ? how many are faithfull ? and how many are willing and desirous that the Physicians should see their Drugs, and see the making of their compositions ? Many there be that disdain that the Physicians should be present at the making of their Medicines, and who more then the ignorant, covetous, and contentious sort of Apothecaries. The ignorant thinks (following their barbarous *Nicolans*) that their knowledge (which is meer ignorance far excelleth and surmounteth the knowledge of all Physicians. The covetous are afraid, lest if the Physicians should be present that they should find a great deal of their stufte to be sophisticate, corrupt and naught.

There be also another sort of Apothecaries, which be so arrogant and scornfull (by reason that they be grown very rich, God knows how) that they disdain the Physician, and have him in no estimation, whereas in the ancient time, the Apothecaries (as *Galen* and others witnesse) were but

A Detection of some

as servants and ministers unto the Physitian. *Galen* in his Commentaries upon the sixt Book of *Hippocrates*, *De morbis vulgaribus*, saith thus, The Ministers of the Physitian, are gatherers of herbs, ointment makers, cooks, plaister-makers, clister-givers, scarifiers, letters out of blood, but, if wee (meaning of Physitians) after that wee have learned these things do also sometimes the like, we do no otherwise then even as a master or governour of a Ship, which having knowledge in rowing, do row, when he list, and get up to the top of the mast, and doth all other things belonging to the Marriners art and office. Thus much *Galen*.

I need not to alledge here the 38. chapter of *Ecclesiasticus*, where every man is exhorted to honour the Physitian, how much more then should the Apothecarie honour and reverence him, which hath chiefly his living by means of the Physitian. I speak not this because I, or any Physitian should seek worldly honour, or vainglory. For above all things, *Soli Deo sit honor & gloria*, yet notwithstanding, according to *S^t Pauls* doctrine, we ought to give honour to whom honour belongeth. I remember that when I was yet in a manner but a boy,
in

in age, studying beyond the sea, after a year or two that I had studied in Physick; I would sometimes (for to have the better knowledge in simples) resort to some Apothecaries shop or other. But I should no sooner come into the shop (specially of learned and honest men) but that immediatly the Apothecarie would welcome and receive me with all courtesie and humanitie, and rise from his seat to give me room, and so would entertain me with all gentleness that he might. This did they to me being then but a Scholar, what would they doe think you to the Masters and Doctors of Physick? What maketh many Apothecaries now a dayes to set so little by the Physitians? This is one chief cause, they play the Physitians themselves, they give and Minister Medicines of their own devise (God wot a mad device) indifferently unto all men, yea, and the more ignorant they are, the more bolder they be; for who is so bold as blind Bayard? Many of them will not stick to looke in waters, and not be ashamed even in the Physitians presence, to ordain this or that Medicine for any kind of disease; If any Physitian do gently admonish them of their fault, and specially of giving of Medicines after their own brain: They will

M say

say, that they may as well prescribe medicines, as Physicians sometimes do use to make them. They may play (say they) as well the Physicians, as the Physicians play the Apothecaries, as though a Physician and an Apothecarie were all one. Indeed a Physician may be an Apothecarie, and have an Apothecaries shop within himself in his own house, or may be a Chirurgion, and heal wounds or sores, or let blood himself: *Sed non è diverse.* An Apothecary or Chirurgion being onely of that Art may not be a Physician, unlesse hee abuse and falsely exercise against all reason and conscience, (as many do now a daies) the Science of Physick.

To prove that a Physician may make, or cause to be made, in his own house any kind of Medicines: it may partly appear by the authoritie of *Galen* before alledged, and also by divers other famous Authors of our time, and specially by *Manardus* and *Silvius*. *Manardus* in the Prologue prefixed to the Annotations upon *Mesue*, hath these words: *In times past*, saith he, *the Physicians themselves prepared the Medicines at their own houses, and so kept them ready made, the which as often as need required, according to their discretion, and the necessity* of

of the sick, they used. But since these five hundred yeers or thereabout, this kind of business hath been committed or rather derived from the Physitians, (not without, as I beleeve, the danger of the Patients) unto certain which are called Spicers, or Apothecaries, &c.

Jacobus Silvius in his Book *De Medicamentorum simplicium defectu*, in the beginning, whereas he speaketh of the duty of an Apothecarie, declareth, that as well Galen, as other Physitians, did oftentimes prepare the Medicines themselves. It is lawfull then for the Physitian (if he list) to prepare the Medicines for his Patient himself, but not lawfull for the Apothecarie to use or practise physick for any man of his own head.

I would wish that the Apothecary, as he is desirous of gain, so he would provide all things necessary for his shop; and chiefly, and first of all, for the chief guide and Instrument, that should rule all the rest, I mean the Book of Bernardus, Desseñius, Cronemburgius, *De compositione medicamentorum*: The perfectest in my opinion, and most excellent Book, I beleeve, that ever was made for Apothecaries. Howbeit, because that some Physitians use the com-

positions of other Authors; I would wish also that the Apothecarie might not bee without the Dispensatories of *Valerius Cordus*, of *Fuchsius*, or *Nicolaus Mirepsus*, or the two Books of *Silvius*, containing the choosing, keeping, and making of Medicines commonly used: Or, *Examen tam simplicium quæ compositorum*, *Antonii Musa*, and not to follow still their blind *Nicolaus Praepositus*, which is full of errors. It were meet and convenient also, that the Apothecaries had divers searces to searce their Powders in, for some Powders would be searced very finely, as they that be Dieuretick powders, and most part of Electuaries: some more grossie, as the most part of Laxatives, except *Agarick* and *Colocinthis*.

The Apothecaries have many excellent Dispensatories to direct them, in making up their Compositions, as the new *Pharmacopæa Londinensis*, that of *Renodeus*, of *Bandon*, *Bertaldus*, the *Pharmacopæa Augustava* and others: As also in Chymick preparations, *Grulingius*, and those two excellent Peeeces set forth by *Schraderus*, his *Pharmacopæa* and *Quercitanus Rodivivus*, and I presume there may be something of worth, in the Manuscript I have added

ded at the end of this Work, though hee have failed in his judgement; in holding that there is no Salt in Vegetables, &c. But *Guinther Bilich* hath given a sufficient refutation to that folly, nor can he blemish well deserving *Quercetan* with the Title of $\chi\epsilon\theta$.

Of Morters likewise they ought to have divers sorts for all precious Stones, (that enter into Electuaries) and Corall, ought not to be beaten in a brazen mortar, but Pearls and Corall ought to be beaten in a mortar of white marble; precious stones must be made or grinded into powder upon a stone called in Latine, *Lapis Porphyrius*, which is a kind of red marble. Also Purgations, or Electuaries, Pills or powders mingled with any Syrrups ought not to be dissolved in brazen morters, but in morters of glasse, of stone, or of some fine wood; yea, and if they were of silver for great men of high degree, it were best. Also some Ointments ought to be made in morters of lead.

It were good also that no kind of poison should be pounded or dissolved, in any morters occupied daily for the shop, for thereof hath chanced much evill.

I had almost forgotten one great abuse,
M 3 that

that a great many Apothecaries commonly do use, that is, when the Physitian prescribeth any *Losengis* to be made. The Apothecary will put to the powder as much sugar as pleaseth him, insomuch that many times the *Losengis* shall have little other taste, then of the sugar only. *Fuchsius* willetth that there should be but thrice as much sugar as is of the powder, so that to three drams of powder, there should be put but an ounce and a little more of sugar, howbeit that some other (as he saith) do use to put four times as much sugar as of the powder. But *Dessepius Cronenburgius* saith, that the Physitians put commonly a pound of sugar, to an ounce of powder. And to say my fancie and opinion, it were good that the Physitian should determine and appoint in his Bill, how much sugar hee would have to be put with the powder. For sometimes it happeneth that he ordaineth a Purgation in *Losengis*, sometimes he useth some bitter powder, or very hot powder, that requireth of sugar more or lesse, but commonly bitter or very hot pouders require more sugar; and pleatant and temperate pouders require lesse: but many Apothecaries are very liberall, which spare for no sugar when they make *Losengis*, because they

they have more respect to their profit, then to the Patients health. Again, they love to make all things pleasant and sweet, so that sweet money may come in. And it is most commonly seen, that the most part of sick folk abhorre sweet things. Wherefore they should know of the Physician (unless he determine it himselfe in his Bill) how much sugar he will have to the making of the Medicines.

Now at the last to conclude, because that Apothecaries shall know partly what their dutie is, I will here recite what *Silvius* saith in the place before alledged, of the Apothecaries duty. And thus I have translated his preface into English.

Although that the Apothecarie be indued with many things, commonly a greeling with the Physician : as with naturall discretion, a perfect knowledge of the medicines, a great diligence in all such things as belong to his office, and an honest behaviour; yet neverthelesse many things are in a manner peculiarly appropriated unto him, the which sometimes were also proper and belonging unto the Physicians, at what time they themselves prepared the medicines, as it appeareth that *Galen* should have done it, in many places by his

writings. Now such things as be proper to the Apothecaries are these: The chusing Medicines gotten by discretion and long experience, afterward the manner to keep them, and to know the time when they are in their power and force, or when they are destitute from all vertue and corrupt. Also, how and in what manner each of them ought to be used, either by it selfe alone, or else to seeth it, or to bruise or breake it with other, or to prepare it after another sort and manner. It is also convenient and necessary for an Apothecarie to know his Grammer, because he may the better understand the compositions of the ancient writers, and also the daily writings (which commonly they call Receipts or Bills) of the Physitians. In the which writings, if perhaps they have written any thing more or lesse then need is, or more unpleasant then the Apothecarie conjectureth in himself, to be meet and convenient for the pacient, he then may gently tell and warn the Physitian of it.

Moreover, we would that the Apothecary knew perfectly the Art and Science to choose the Medicines, to prepare them, and to compound them together. We would also hav. him to be contented with a meane apparrell

apparrell, to be merry and pleasant in communication after an honest sort, diligent in the Patients businesse, to be no covetous, no lascivious, no drunkard, nor contentious person: all which things are even in like manner to be observed of the Physitian as of the Apothecary, as *Hippocrates* testifieth in his book, called, *The Office or Duty of a Physitian.*

And if the Apothecary be indewed with such perfections of spirit, of the body and also of fortune: he will never give any Medicine (specially being of any great operation) to any man, unlesse he be of the counsell of some cunning Physitian; nay, neither will he give any thing, be it of never so little effect, knowing not the vertue of it. For oftentimes certain remedies, although they seem but weak, yet nevertheless through quantity, qualitie, and space of time being unwholsome, or the occasion many times of great diseases, and taketh away the right and true way of curation: Inlomuch that under such remedies, the body being in cure, will soon afterward bear greater and stronger remedies, but not convenient to the purpose. Moreover he shall not commit any crime or fault, either for love or favour, or hatred, or fear; nor he may not
bee

bee seduced by monie or led by ignorance. Neither shall he give at any time any poison, or things procuring abortion, any thing that is too old or out of use, things altered and sophisticate, or any *Quid pro quo?* But he shall ask counsell, (as often as need shall require) of a well learned Physitian, what simple or compound medicine is to be substituted and taken, for lack of one or the other. He shall not augment nor fortifie the quantity of any strong medicine to the intent that by a greater evacuation insuing, men should suppose him to have better Apothecaries stuffe then any other.

O ! I would the Apothecaries of these daies would frame themselves to this rule, and the Physitians likewise on their side, Physick should nor then be so little regarded and set by, as it is now a dayes, yea by opprobrious words and taunts despised of a great many. Now I beseech the Almighty and living God, that once he would make the Physitians and Apothecaries to be of that desire and minde, that each of them would rather wish to be indeed, then to seem, or to be called a right, good, and honest Physitian, a right, good, and honest Apothecarie.

And if they do neglect that godly gift
and

and grace, I pray God that once some punishment may bee appointed by the Laws and Statutes for them which will enterprife to practise a Science (so heal-
thie to mans bodie, when it is well mini-
stred, and again so hurtfull and dangerous,
when it is ignorantly and rashly handled)

before they know it. Thus much *Sil-*

vius. And here I will make an

end of Apothecaries, now to
the Chirurgions.

A



A
DETECTION
 Of the rash Boldnesse
 and Ignorance of divers
CHIRURGIANS.

The Third Part.

Here be many Chirurgians in this
 our time, that practise Chirur-
 gery, more by blind experi-
 ence, then by any Science, who
 in using many things apper-
 taining to their Art, know almost the vertue
 and operation of nothing that they doe use.
 For how should they know it, when they
 are

are altogether unlearned? yea, and many of them there are that know never a letter in the book. Whereas Chirurgery being counted as one of the chiefest parts of Physick, (having his practise chiefly in the time of warre) it were necessary that the Chirurgian were not onely prompt, feat, and diligent in his doings, but also that he were well learned in Philosophy and Physick, and also somewhat in Astronomy.

But how many shall a man finde in a country that have learning? how many are there that proceed in their cures truly and uprightly as they ought? not very many I beleve. For the most part being ignorant and void of all good learning, yea, and know almost no part of anatomy (which is most necessary for a Chirurgian) cannot scarce heale a green wound, and some there be that can scant let a man blood (which is a handsome and pretty feat, and yet not so hard a thing to be done) nor well apply a Ventose called otherwise a cupping Glasse, unlesse they put the man to pain and trouble. There be some that esteem themselves so well exercised and perfect in the Art, that they think that no cure can come amisse to them: They will enterprise and take in hand all manner of cures, be they never so hard

hard or incurable : for they have fear of nothing, but rashly goe to work in all things. They will cut, they will launce, they will cauterise (which they call searing with a hot burning iron) they will saw off a leg or an arme of the body, they will use corrosives that shall peirce even unto the hard bones, and they will make an issue almost for every trifle, and for every disease, without considering the circumstances of the whole matter, not weighing the strength, the age, and the complexion of the body, besides many other things that are greatly to be considered in such cases. And possible it is many times that the Patient hath need of some inward Medicine, which the Chirurgian can, nor may well give without the Physicians counsell.

And indeed it were very meet and necessary, that the Chirurgian should undertake no hard or dangerous cure, without the Physicians advice. Howbeit, as I see now a dayes, the most part of them doe all things, following onely their own fantasies.

They stick not to give Electuaries, Sirups, and other Medicines themselves, yea, and Purgations also : which thing me thinks is very uncomely. It is not reason that he that should be but as a Minister unto the Physician

Physitian (as I alledged before out of *Galen* when I treated of Apothecaries) should use the part of a Master and Phylosopher, and ordaine such things as he knoweth not the nature of. It is not unknown, that many poor Patients perissheth under such rash and lewd Chirurgians.

But to say the truth, the fault is not so much in them, as in those that give credit unto them. For as the world goeth now a dayes, if a Physitian, or Chirurgian hath a fair tongue, and hath also somewhat a comely body, and can speak (I will not say flatter) indifferently on every mans side, gratifying each man according to his quality, desire and mind: every man unlesse he be very wise and circumspect, will lightly give eare and credit unto him, and account him for a discret and cunning man. Such a one shall lack nothing, he shall be welcome, he shall have much curtesie and pleasure shewed him, finally, he shall have his whole hearts desire, (that is money enough) For such Fellowes by their subtilty and faire tongue, will allure more people unto them, and get themselves more treasure in one quarter of a yeare, then shall an honest and good Physitian in the space of three yeares, and all by their fleering face and flattering words.

I would to God that all men would be-
ware of such fellows, and remember the Pro-
verb that saith: *Dulci sub melle saepe venena*
latent. Under sweet meats is many times a
poison hid. And as *Virgil* saith, *Hinc pro-*
cul O pueri fugite, latet anguis in herba,
Take heed, and flee far hence O children, for
the snake lieth privily hid under the grasse.

It is written in the ancient Authors of
Physick, that in the old time, the Physitians
were wont to exercise Chirurgerie them-
selves. Howbeit it hath been now of a long
time, that the Chirurgions do onely exercise
this part of Physick for many considerations,
and chiefly for this occasion, as *Hippocrates*
saith, *Vita brevis, ars vero longa*, The life of
man is short in comparison of the Science of
Physick which is long. Therefore because
the Physitians cannot well give them-
selves to study divers other Sciences, which
be necessary to Physick, and make Medi-
cines, and use also Chirurgerie, and go and
visit their Patients: It hath been thought
good that other men called Chirurgions,
(and yet having sufficient knowledge) should
have the office and ministerie to use
and apply outward Medicines, and not to
enterprife and use all Medicines for all disea-
ses both outward and inward, as some
doe,

doe, for in so doing they go beyond their bounds.

There are excellent peeces of late put forth of Chirurgerie, as *Glandorfinus*, *Hildanus*, *Paracelsus* and others in Latine.

Felix Wartius in the German tongue.

Reads Works, *Banisters*, *Wood-hall*, *Parents* by *Johnson*, and others in English, *Cooke*.

Chirurgerie although it be a manuell Art, yet it hath his speculation, which cannot be had without reading of divers Authors, and especially *Hippocrates*, *Galen*, *Ætius*, *Paulus Aegineta*, and of the latter Writers, *Tagaultius*, *Hollerius*, *Bologuinus* and others. As for *Joannes de Vigo*, whom the Chirurgions of our daies do now most follow; I would not that they should so greatly trust him, because that he is not to be followed and read without great discretion and judgement, for the obscuritie and doubts, yea and errors that be in him. He bringeth in many things in his Book, which belongeth rather to the Physician to know and practise, then to the Chirurgion: as *Electuaries*, *Potions*, *Purgations*, and many other inward medicines. If the Chirurgion have knowledge in Physick, I mean that he know the complexions, the nature
ot

of Simples, and the effect and operation of Compositions, hee may use them, else not. For if he do, he shall do as a blind man that shooteth at a hare, he shall work at all adventures, and many times with the danger of his Patient.

I much marvell, why the Chirurgion should disdain to come ask counsell of the Physitian, when he hath any hard or doubtfull cure, it can be no hinderance to him, and to say the truth, it is no great profit to the Physitian, unlesse it bee for some rich man. The good Physitian will use the poor as the poor, and the rich partly for his money, as well as for his love and friendship. For the Physitian must have his living by some kinde of persons. And not only the Physitian, but also the Apothecarie and Chirurgion should deal charitably with the poor, and use every man according to his capacity. But this I have spoken, *Velut obiter*, as by the way : Now to the purpose.

Many perchance will say unto me, what needeth the Chirurgion come to aske any counsell of the Physitian for any cure that he taketh in hand, whereas it is well known that the Physitians (except one among an hundred) doe not use to practise Chirur-

gerie themselves, and by this means cannot instruct the Chirurgion in that thing, that they know not.

I answer, that the most part of the Authors of Physick, do treat of Chirurgerie in their Works, and although we meddle little, or nothing, with outward diseases, yet doe we know what belongeth to them, and how they ought to be cured. And I say also that Chirurgerie can never be well practised without learning, or a reasonable way of proceeding which is called in Latine *Rationalis methodus*, the which the most part of Chirurgions have not. As for example; A man hath an hot inflammation, or (as commonly they call it) a swelling or imposthume in some outward part of his body, and feeleth great pain. What remedie shall the Chirurgion use for the expelling of it? he must first consider what is the nature and qualitie of an Inflammation, called in Greek *Phlegmone*, whether it bee ingendred of pure blood only, or else mixed with any other humour, what is the cause of it, and what be the signes?

Now let us suppose that the said *Phlegmon* be ingendred only of a superfluous blood, and the cause Antecedent be *Phlethora*, that is, abundance of good blood in
all

all the body. Now what shall the Chirurgion do in such a case? shall he apply any thing to the swelling, without considering whether the body must be let blood or not? Whether the swelling or *Phlegmon* be yet *in fluxu*, that is a breeding; or *in statu*, that is, in the worst case that it can be; or in the declination, whether or when, he ought to use repercussives, resolutions, or both together? The generall rule of Physick saith, that in the beginning of all inflammations, we should use repercussives, that is, Medicines to repel, and drive back the fluxion of humors: But I put the case that the swelling be in the Eminencies, or that one hath the Pestilence. The Chirurgion perhaps following the generall rule, wil lay a Plaister to repel the said inflammation or swelling. Doth he wel think you? he doth so well that either he putteth the Patient in great jeopardy or else he killeth him.

Wherefore the Chirurgion must thinke that a great many things must be considered more then one, as often as he undertaketh any cure of weight; and must thinke it no shame nor reproach to counsell with a Physician in such matters. For verily I say, (to conclude in few words) That no man be he Chirurgion or Apothecary, shall never work well without a true method and learning. For look what thing soever hee

taketh in hand, what cure soever he hath, he being destitute of learning, shall never bring it well to passe, without the aid, help, and counsell of the Learned Physitian ; for if he chance to doe any notable cure, it shall be peradventure more by hap hazard, then by procurement and diligence. Here I could bring in many other abuses of Chirurgerie ; as how some pretend and exercise Physick (to their shame, deceiving the people) under the cloak of Chirurgery ; some drive off, and linger out the time , to have the more money. Some be so presumptuous, that they will warrant every Patient, when oftentimes many by their negligence (and for lack of a good diet , or some other good Medicines which should be appointed by the Physitian) dye upon their hands. Some when they have done all that they can, and see that their Patient begin to go to wrack, then immediatly with all speed, they will run to the Physitian with their Patients water, and then to ask counsell when it is too late : and all because they will shake off the burthen from their own shoulders, to cast it upon the Physitians neck, and to put all the fault in him, if any thing chance otherwise then well, that so they may be clean discharged and unburdened

dened from all manner of blame and reproach. Some go from town to town, from market to market to utter their trumperie (their ware I would have said) and to shew their cunning among the homely and simple people of the country.

But all these wily and deceitfull fashions are not yet thoroughly known, nor can never well be, untill such time as a Reformation be made by some Law or Statute, which I pray God to grant shortly, to his glory, the profit of the people, and for the good of the Common-wealth.

A M E N.



*To both the Universities, Oxford and
Cambridge, A Peroration.*

THus much I had (Right Worshipfull) to say,
And to declare most plainly to you all :
The great abuse committed every day,
In this our Art, which Physick men do call.
The chiefest points I have in generall,
But only toucht in this my little Book :
He may know all the matter in speciall,
Who so to it more narrowly, will look.

I marvell much, and sore lament to see,
That such abuse hath been suffer'd so long,
And is now yet, (it will none other be)
You and we have (me thinks) great wrong,
Therefore ye should no more the time prolong,
But seek some means the learned to defend,
With priviledges, that to you doe belong,
And thus doing, you shall no man offend.

I ever had, and have yet at this hour,
A great desire, both in my heart and mind
That every good Physician to his power
Do all things well, so worship shall he find.
But now there are Physitians so unkind
To God and man, that they passe not a straw
Which of both ends go before or behind,
They are so void of truth, and fear of law.

This sort will now envie with force and might,
Straight against me, and this poor silly Book.

Where-

(Wherefore I pray, defend me and the right)
They will lay wait for me, and alwaies look;
What time they may destroy me with their hook
I mean their tongue so venomous and sharp.
But by Gods grace, and your help, I shall brook
That well enough, and not come in their trap.

*Mollibus hac non est, sed duris dura Securis,
Dura secat, damnum mollia nulla ferunt.*

FINIS.



V^{ic}

A
TRANSLATION
OF
PAPIUS

Concerning
APOTHECARIES.



Very Medicine whilest it is in-
tire, hath his temperament, and
from thence his perfect and
integrall strength and faculties.

But for the most part, the
worke is in the preparation of the Medi-
cines, that they may be made fitter and con-
venienter for Diseases.

For to dry, moist are fitter.

To moist, dry are fitter.

1. Waters have a faculty of moistning,
and repairing the Spirits.

2. Spi-

A Translation of Papius

2. Spirits quickly and strongly revive, and repaire the Spirits.
3. Oyles doe strongly mollifie and loosen.
4. Powders doe drie.
5. According to the custome of the sick, of which one is more pleased and delighted with a drie forme, and the other with a moist.

For the forme ariseth from the preparation

That it may work more suddainly, by peircing with his thinnesse; and more strongly, whilest the faculty, which is placed in the thinner parts, is increased, those subtiler parts being drawn and streightned together, for preservation sake, by taking the warry moistnes away, which subjects it to corruption. And although often, single Medicines, by their faculties and workings, may suffice for one, or many diseases, yet there is often need of their composure, as well for preparation sake.

1. For many distillations have need of infusions, for the custome of the sick, of which, some stand affected to pills, and other to potions.
2. For the curative ends.

1. Maligne quality of the Medicine.
2. The troublesome smell or taste, and the dull slowness stirr'd up and increased.
3. When many diseases are joyned together, every Medicine may oppose his severall disease.

Treacle is compounded of many excellent Counter-poysons, Cordials, and such as make the blood purer, because that ought to be a generall Antidote for all Poysons.

1. One preparation is made by resolving and separating some, or every moistnesse from the drie earthy part, as in the calcination of Stones, Woods, Coales, by burning, or otherwise drying them.

1. Or by drawing forth from an actuall moistnesse. 1. Spirits, as from Wine, Water. 2. Juyce by expression. 3. Oyle by expression, distillation.

2. From a potentiall moistnesse, } Spirits } by distillation.
 } Oyle, }

2. From an actuall drynesse, the most thinne, subtill, and pure earthy parts by a dry distillation, as flowers of brimstone are made:

When

When the faculty of, with Smell.
 the Medicine is drawn, { or Savour.
 either. { without { Colour.

And that is performed by { Expressions.
 the said, { Distillations.
 { Infusions.
 { Decoctions.

some { Infusion & } are joyned } Distillatio.
 times { Expressio } together with } Decoction.

For the same faculty is not in a native Medicine, prepared by the said wayes, or manner, for preparation changeth the temperament, some more, some lesse. Seeing that especially, on which fire worketh more strongly, doth either lessen, or consume the moisture, and conveyeth in an *Eupyreuma*, and somewhat changeth the faculty of the fiery heat, savour, and taste, mingling the subtiler earthy parts with watry, when with his accidentary heat, it induceth sharpnesse.

Nor is any Medicine made more perfect and excellent, by any preparation, (since to the perfection, in which every thing is created, nothing can be added by art) but made more convenient by certaine ends; and yet not alwayes, seeing many things are more usefull and better without preparation, then prepared; as the

1. Bezar-Stone , and rasping of Harts-horne, against poysons.

2- Of the same, as if in hystericall passions, Powder of Amber by the mouth , and Balsome exhibited below.

Nor doth that preparation alwayes excell, which taketh away the thicker earthy matter , seeing that it is more profitable in many effects, then the thin.

It may be here enquired , whether Medicines, in the body may be so digested by nature with the help of heat, as aliments ; and whether every or some preparation of Medicines, may serve helpfull to this digestion. The soule of man in the act of concoction (and cure by Medicines) useth the same heat, the same humours, vapours, and vessels, thorough which also it conveyeth the nourishment , and altereth the faculty of the Medicine , resolveth the humours , and by helpe of the humours , the earthy parts , and by this meanes , in this change, & resolution diminisheth them, and separateth the thicker parts from the thin.

In like manner the preparation of the first Aliment, and Medicament maketh it fit, that the Aliment may more easily be digested by the heat ; and heat and the humour passe thorough the Medicine and draw out

his faculty, and lead it to the affected part; yet notwithstanding some preparation taketh away the vertue or strength, as we have said of calcination. But this especially differeth between either act.

That in the Act of concoction the temperament of the first Aliment is changed into the temperament of blood; but of this in the temperament of the cure of the parts, the soule useth the temperament of the Medicine, uncorrupted, as much as may be, as well to the changing of the qualities, not naturall of the humours and parts, as to the evacuation of things hurtfull: so as the Medicines may not properly be said to be digested, or concocted.

But there are seven principall wayes of Physick preparations:

1. *Powdering.* 2. *Melting.* 3. *Expression.* 4. *Infusion.* 5. *Decoction.* 6. *Distillation.* 7. *Extraction.*

1. *Powdering* is, when a dry Medicine is reduced into Powder, by brushing or beating it, that it may be the easier with liquor, either simply dissolved or mixed: serving whereto, is drying by heat of the Sunne or fire; of which sort also is that calcination, which is called reverberation. To many things, in brushing them, some liquor

is added, which prohibiteth the dry exhalation, or vapouring away of the smell; as Rose-water to certain Aromaticall Spices; to Mith, Ambergreese, &c. Water to Almonds, least they cast forth their Oyle; to the seed of Wildseme with Opium, otherwise the clamminess hindereth the brusing, or breaking it; Ammoniacum, Galbanum, and such as are of that kinde, are dissolved in vinegar, at the fire.

1. There is some calcination imperfect, as when all the watry moistness is resolved in the coales, something aereall combustible being left; and when in like manner Harts-horn by a resolving water, the greatest part of the matter which coagulateth or joyneth together by the help of heat, is resolved and drawn forth.

2. Other calcination perfect, as when every coagulation is resolved by fire onely, or other helping dissolvers, without ashes; as is performed in calcination of stones, and mettals, and when woods are burnt into ashes.

All things calcined, or all ashes, have a power of drying, and some have a greater, some a lesser sharpness.

The vertue or efficacy of drying, cometh: 1. Partly from the rarity or thin-

ness in every thing, by which it can receive the humours into it self. 2. Or from the hidden heat or flame, lying in the ashes of stones, or lime burnt, in which, because they are more solid, the flame (which insinuated it self in burning) lyeth hid; and after by the contrary qualities of water, that is, moistness, and cold, it is brought forth into act, whilst the flame lurking extremely resisteth the qualities of water, but not so in oyle.

There is greater sharpness in those things, whose matter before burning was thick and sharp; as Vitriall, rinde of an Oake, Wormwood, &c.

From this reason we exhibit charcoales to Cattle we intend to fat, especially oaken coales, that their powder may easily be drawn by the veins, and passe thorough them, by reason of their thin and subtilness, and so may dilate the veines to make them receive a greater quantity of blood, may provoke the stomach by his acrimony, by his dryness, may draw the chyle and blood, and thence from may prevent Aposthumes in men; especially the coales of the Linden Tree, that the grosseness of the blood may be cut, least the Spirits should be suffocated.

Of ashes also, some are true, as of stones
and

and plants, from which all the liquor is truly carried away by the fire ; some like, or analogically, as of metals who appear dry to the Senses, but by their power keep in themselves their native liquor, by whose benefit they may be poured forth, or altogether reduced : of which kinde is gold especially.

From hence may be demanded, whether ashes retain or keep any vertue or faculty of the Medicine, since the faculty whether hid or manifest, is not but in the temperement, by smell and savour ; but in calcination the temperement, odour, and savour, are altogether destroyed (for nothing is left but the earthy matter) but contrarily, in some of them, a strange heat is induced, native coldness of the earth and acrimony, and in all things which have smell and taste, a different smell and taste ; so that I can conclude no otherwise, but that there is nothing at all retained of the proper vertue of the Medicine in the ashes.

The calcination of Iron, and *Cyprian* Brasse (seeing they agree in substance, and onely differ in certaine accidents) is chiefly made from Sulphur, because it is greedily drawn and imbibed, by these being hot, for the Sulphur, by his hidden acrimony and thinness, peircing, all the coagulation, or matter,

matter, which holdeth and keepeth them together, is dissolved and exhaled away : And whether the *coagulum* of other metall, may be so dissolved by loosning waters, that the potentiall moistnesse may be resolved into vapours ; I much doubt of.

2. *Liquefaction*, or *melting*, is generally an actuation, or working forth of moistnesse lying hid in a dry body, by heat, (a waterie body excepted) but that ought so here to be, that the liquid matter remaining, by piercing may work that in the body, which by his verue or facultie it is able to doe.

The materiall principles of which subllary bodies consist, are two, 1. Earth, and 2. Moistnesse, which are the subject of heat, upon which he worketh, for earth is the bound or limit of moistnesse.

Of humours or moistnesse, some subsist by themselves, all earthy matter being removed : such as is an airie waterishnesse, which is : *Spiritous* or *Oily*. Both of which are inflammable, or apt to bee kindled. To these, as to the earthy matter, so many materiall principalls are answerable in an animate bodie, (by which name that is nourished in these.)

Again the Oilie hath three differences, for

it is either from the fat of living creatures, in plants, from which that which is drawn forth, yeeldeth his chief nourishment, or floweth by his own accord from stones, (as *Petroleum*) but is not fit for the nourishment of a living body by reason of the excessive heat, as also the rest. And for the same cause, that which lyeth hid in amber, brimstone, and waxe, (for that which lyeth hid in honey, is of one and the same kinde with oyle of waxe) But Manna and Saltpeter, because they easily take fire, prove and shew a hidden oyle in them; but then by reason of the scarcitie of the oyle, as also for the plenty of the earthy matter, that is first resolved, and vapoureth away into smoke, before it is separated from the same.

Besides these, there are others which are not actuated, nor brought forth, but by heat, nor are kindled by themselves (that is, do not nourish a flame) but the heat being removed, return to their former drynesse.

And again of these things, there is a three-fold sort or kinde.

1 One sort of plants, seeing that the ashes of these melt.

2. Of Metals. } and these are fluxible, or

3. Of Minerals. } run forth in the fire,

And truly these, cannot be separated at all

from their earthy matter, without their losse.

By the said humours, or moistnesse, wee understand the oilie, which is melted out, that it may preserve, and keep his actuall moisture, the which is done by mixing the oiles, (especially those of the same kinde) or also hot water, (for so we melt or dissolve Manna) or vinegar: (as we melt Rosins) for by this means, the earthy matter, overcome by the aiery; by the multitude, or by help of a little heat, continueth moist.

Those things easiest melt, which the heat can easiest penetrate: Notwithstanding either 1. The Soliditie or hardnes which is in iron or brasle: Or 2. coldnes actual and potential which is in other mettals. Or 3. actual dryness, or scarcity of the oile contained, which is in Amber. But earth, and the said watery and aierie humour, is not found in all sublunarie bodies, nor can all sublunarie bodies be resolved, (as *Pseudo-Chimices* vainly imagine) into these principles. But of that Solution and Separation wee shall presently handle.

3. *Expression.* By hand or presse (when greater strength must be used) the jucinesse is drawn from the plants and their parts: Or simply, the waterie or oilie juyce, by certain

certain helps: As 1. Almonds unhusk'd are drawn forth (least the husk or rinde should suck or imbibe a great part of the juyce) and being bruised that the oile without any hinderance may passe forth, through the thinner earthy parts, a little quantitie of rose water is poured upon it, as well for smells sake, as that it may come forth the readier; and after this manner an oile is drawn forth of the meal of the Sesame seed.

2. Nutmeg is hung up in a covered still, that it may touch the hot water, that the hot peircing vapours afterwards may carry away with them in the expression, the flowing oile.

3. Yolks of eggs, boyled or fried in a frying pan unto hardness, more easily send forth their oile, being afterward pressed.

4. From corn or grain put between two hot plates of iron, an oile is drawn forth, which is gathered together by heat.

4. *Infusion.* Dry things are infused into liquor fit for our purposes, that by helps of actuall or potentiall heat, they may impart their vertue to the liquor, and so may be more pleasantly received in at the mouth, or else that the hard may be softened, or loosed,

sed, or that the liquor may correct some qualitie of the thing infused, or contrary. So we infuse *Rubarb*, or the leaves of *Senna*, into hot water, (lest the thin parts should exhale by boyling) being well and close covered, and leave them in a warm place, (and so likewise the leaves of *Roses*, *Rue*, &c. in vinegar) that the moisture actually warm, passing through all the earthy parts, may receive into it self, the vertue of those things which is in the thin parts.

So Purgatives, or changing Medicines, being infused in wine, or spirit of wine, we place in a cold place, that the wine may not fowr, and that the moisture potentially hot, which I have said it will make in the hot bath, that the moisture by the actuall and potentiall heat, may work so much the stronger; but this latter is compounded of Infusion, and Concoction.

The things infused are left the longer in the liquor, if the matter infused, bee the grosser or harder, and the moisture potentially hot; but lesse while, if the liquor be more thin, and penetrateth more, and hath lesse potentiall heat.

For you must take heed, that they stand not so long infused, that they may putrifie, or contract foulness, or hoariness.

To infusion belongeth 1. We pour out a cold emulsion, (as for example sake) with the seeds of Melons, or Pomepions, husked and bruised, and strain them through a linnen cloth, so long as they will cast forth a milkie juyce. 2. A lie. 3. When a hot iron, flint, or stone heated, communicateth their attraction to oile or water quenched.

That oile which they call Philosophers oyle, taketh from the flame a very heating power, as well in this Infusion, as in the following dry distillation. 4. When powders or things calcined, as either salt, and ashes poured forth, receiveth the taste and smell, and strength of the juyces which they imbibe.

- But Spirits suddenly resolved exhale and vapour away, Being infused in salt, or ashes flowing. 5. Lotion, as when the yellow colour, and troublesome smell of turpentine is washed away with water, as also when the *Cyanean*, and *Armenian* stone are washed, oiles and fat, that the vitious malignant qualities, and foul smell may be taken away.

Lye, is a waterie or spiritous humour sifted through ashes. Therefore it is to be valued as well from the nature of the ashes, as the moisture poured out on it, for from
the

the ashes, it hath his strength of drying, cleansing, and cutting by his sharpnesse, which the actuall and potentiall heat of the liquor poured forth increaseth, and by consequent it hath no strength of softning or conglutinating together.

If the moisture poured on, be potentially hot, or cold, of the same nature will the lye bee also.

But seeing the ashes doth retain nothing of the vertue of the medicine, neither from the lye will any vertue be in it, at all. The lightnesse of the lye, ariseth from that moisture of the ashes, which we have said is melted with a vehement fire, and advance the passage through the vessels, taken by the mouth, and after the cleansing of the foulness away, induceth especially a smoothness to the skin of man.

In the said faculties, and in the manner of generation, it is like to the wheyie part of blood, by which name it hath a sympathie with the reins and bladder, and from thence a diuretick power of cutting the flegm, and de-obstructing the veins. But it hath no sweating power, unlesse it bee got from good wine, or the Spirits of wine, nor of a counterpoison by it self, unlesse it be got from distilled waters, decoctions,
and

and infusions of this kinde, or that plants resisting poyson, be put in place of *strata*, in the straining through.

But by accident whilest it resisteth putrefaction, and tough clammy poisons by drying, and cutting, by urine and sweatings; it carryeth along with it the poison, nature together thrusting forth the poison, by which advice, many drink their own urine in times when the aire is infected.

That mixture also is like to infusion, when the oile and watery humour is mixed with the earthy matter, for when the oily humour repelleth from it the water, contrarily the waterie may be easily dried up with the earthy: so that thence it may easier admit the oile, it accordeth rather that the earthy matter be mingled before with the waterie moist, then with the oylic; so in the threefold medicine, lythargie, or white-lead, is first mingled with vinegar, and after with oyle.

5. *Decoction.* The humour is either digested by the fire alone, or with the humour and earthy matter, untill that either for the most part, the waterie parts exhale away, as it is in boyling of salt water; 1. Of a Nitrous humour, of juyces, expressed, &c. That no occasion of Putrefaction

on may be given. 2. The vitious or evill qualities exhale away. 3. Hard things may be softened. 4. The Medicinable qualitie of the things infused, may bee communicated to the humour. 5. And that the moiste parts may be exactly mixed and united with the earthy.

And these also are two ends of insolation, when we expose into the sun, oyle, spirits, or vinegar, with things infused, for this also is a certain decoction, or digestion, that the earthy matter, may be gathered together and settle, so that afterward it may be separated.

That humour is either an oylie, or a waterie juyce drawn forth; water, wine, beer, sweet wine, honyed wine, and vinegar. Foolishly called by some a *menstruum*, since no Physicall infusion or decoction requireth the space of a month, but may at the utmost be finished in three daies space.

1. Decoction is made in a vessell shut or closed, when we fear the losse or flying away of the subtile and thinner vapours.
2. Or in an open vessell, when we would exhale offensive qualities: There is need of being carefull about it, and looking often to the matter, that it may not bee burned, and of double clarifying it, either in
the

the bath, to keep in the faculties of the things infused, and to prevent *Empyreuma*.

1. By reason of the delay, hard things require a long time (which for this cause ought first to be put in, and require more moistnesse) in which their great abundance of moisture is to be resolved for avoiding putrefaction: 2. Lesse hard, require a lesser time, when there is not such great abundance of water to be resolved; so we boil leaves, to the consumption only of the fourth part of the water: 3. Flowers and Spices require a short time, to the boyling of which, two or three walmes will suffice.

Sometimes the decoction is reiterated or the infusion, by a straining or expression renewed, that the thicker parts being separated, those which are thinner, may in the other decoction, bee more exactly united together.

There is also a certain naturall coction, as when new Wine boyleth up, or as new Beer brewed, Honey and water mixed, new Wine, &c. and some infusions; when as the potentiall heat actuated, or put a working separateth the grosser parts from the thinner, (some advancing upward, and some settling downward, and resolveth the thinner parts into vapours or spirits, which
being

being scattered, if there be not space, or issue enough to goe forth, the same break the vessels a peices though very strong.

Though according to the opinion of *Actuarius*, Sirrup, or a Julep, be water boyled with Hony or Sugar, or Wine boyled to the third part, yet at this day, all Decoctions are called Sirrups, in which water with plants is boyled, either with, or without Sugar or Hony; and Juleps when stilled waters, Rob, when the juyces are pressed forth in an equall weight with Sugar, or boyled with a halfe part of Sugar. Sugar and Hony are added, for cleansing, taste, or lusting sake: For by their clamminess, as by a coagulation, it conserveth the parts united.

In preparation of simple Sirrup, for continuance (as for example sake) of flowers of Violets, or Roses; it is best to have the juyce of Violets pressed out, to be infused raw in Sugar clarified warme, (not boyling, lest it exhale away some of the smell) and to set it into the Sunne, to resolve away the superfluous watry moistness; and if insolation suffice not, by inclining the vessel to seperate that which is watry, and then being boyled again, to poure it on, for so the smell and strength of the Medicine will be
prefer-

preserved, and kept more powerfully ; concerning which, our Reformer *Quercetan*, hath nothing he can more boast of.

But seeing in Roses, there is an aieri spirituous, and oylly matter, which either doth not enter the juyce, or is more drawn out by a fervent decoction ; it is best, that Roses be first infused in a boyling, or fervent decoction, and some houres after pressed forth ; and to this juyce other Roses be put, and being about nine times iterated, by infusion in *Balneo* (to prevent *Empyreuma*, and *Evaporations*) then that juyce at length prest or strained out, should be boyled with about a third part of Sugar, to a fit consistence in *Balneo Maria* : For since the purgative strength of Roses is rather placed in the earthy part, *Quercetan* erreth, whilst he would have the digestion of the juyce at length drawn, or prest forth, to be repeated in *Balneo*, and that which is clear to be separated, adding thereto the earthy parts.

But plenty of the said flowers being wanting, infusion in boyling water, the vessell being well closed up, hath the next place ; nor then is there any need of *Bal-nent* ; it sufficeth to be placed in a warme place for certain houres ; or if you had rather use the distilled water of Roses, it

ought not to boyle forth, but to be placed a while in *Balneo* with the Roses.

There is also a salt made or prepared by decoction out of salt waters: It is the propriety of Salt, to bind and be sharp, brachish, and of a watry ofspring, by which name, it receiving into it self a moist aire, forthwith melterh, as also others which from their first origine, are rather watry then earthy.

From whence it followeth, that no true Salt can be got out of Plants, yea, even from them which abound with Saltnefs: Such as are, Kaly, or Saltwort, and Sea-grape, or knotted Kaly: For which cause we refuse, and altogether reject those white Powders, which are made of sodden lyes; whilest lye filtered is stilled, till there remaineth in the bottome a thicknefs like Hony, which is dried at the sunne, or by the Fornace, and at length, for whiteness sake, is burnt by a moderate fire in a Gold-Smiths pot, when they want a native genuine saltnefs; and if there be any, it is much inferiour to that in naturall Salt; when in like manner, the lye retaineth nothing of the nature of a Medicine (besides sharpness) much lesse the foresaid Powders, unless peradventure, those which are void of all sharpness, may be usefull gently to dry, but will not answer

swer the labour of making them, and cost in their operation.

Neither can true Salt be gotten, or made out of urine. For if it be boyled or stilled, till the watery moisture is resolved into vapours, and the dregs be calcined, there ariseth a Powder with an odious taste; and if you poure water upon the thing calcined, and after draw it by distillation, you may truly washaway the stinke; but you will have remaining, rather the taste of Salt-peter, then of Salt.

But what madness is it to reckon Vitriall, Allum, and Sugar, in the number of Salts? where is their saltness, shall then likeness make all things the same.

In like manner also, by decoction almost are prepared, your Lohochs, your Electuaries, candid things, Morsels, Pils, Trochiscs, Glisters, Suppositories, Ointments, Pulveste, and Cerots.

In making your Medicines, which are called Lumbitives, and Arteriacks, from the rough artery, a Wind-pipe they mollifie. The *Arabians* call those Medicines Lohochs, which have power to mollifie the Brest, stay Catarrhes or Rheumes, and cut flegme, and they make a decoction first to clamminess, then adde Sugar Pennels, and

boil it to the thicknesse of honey, and after expression when it begins to cool, mingle the rest in a mortar, without decoction ; as Vine kernels , sweet Almonds husked , juyce of Liquorice, *Tragacanth*, and *Gum Arabick*, *Ireos* Roots, and white Starch, because their strength will rather be weakened by decoction, then drawn forth.

But seeing the cutting faculty is extream contrary to tough and thickning, and that the one weakneth the strength of the other, sometimes they are wont with great oversight to be mixed together.

In like manner in Electuaries, they are first boyled in the same order, of which I have formerly advised you, those things whose faculty may fitly be drawn forth by decoction, to the consumption of their parts ; there is after added a third part of Sugar, and then it is boiled up again to a consistence, as well for taste, as lasting, and last of all such things are added, which are not fit to be boyled, such as are conserves, flowers of *Cassia*, pulp of Prunes, *Tamarindes*, &c. or *Sena* leaves, *Rubarb*, *Agarick*, *Coloquintida*, are infused into the boyling decoction, and about twelve hours after, they may be streined with expression, and the expression forthwith boyled up to

a consistence with Sugar, the rest as I have said being added.

Those things which we will preserve, we first cleanse, and throw away that in the roots which is woody, and by decoction we soften hard things, and take away the bitterness from bitter things, (though this rather serve for gluttonic then Physicall intentions) and being lightly dried, we put Sugar to them warm boyled up to a fit thicknesse (for too much heat shrinketh the fruit) till they are well covered, and then if any of the waterie moistnesse appear, that being separate, and reboyled is poured on: but some fruits (as for example fake) Cherries are presently dipped into the said Sugar.

The soundnesse of the Flowers is conserved (from whence they are called conserves) if unto them being small bruised, a double part of Sugar carefully powdered be mingled, and exposed to the Sun to drie up the watry moisture, and therefore they are to be gathered in fair and dry weather, and the whites are to be clipt off from the roses for their bitternesse.

Sometimes to gratifie the sick, we mingle powders simple or compound, or distilled oiles with sugar, and also medicines cut

into small parts : If the powder be pleasant or purging (that the purgative power may not be weakned by too great a proportion of sugar) we mingle an ounce of it dissolved and perfectly boyled with a dram of the said sugar in odoriferous water, or such as shall serve for our purpose , but with powders lest gratefull one dram, with two ounces of Sugar, but of oile one scruple, with half a pound of Sugar, and the Sugar being boyled enough , remove it from the fire, beat it a good while with a Pestle, untill the powders or oile are well mixed together, and then poure it forth upon a Table, and frame out round pellets, or four square Tablets or Lozenges, or Long (which they call Bits); Sometimes to the Sugar powdered we mingle onely some few drops of distilled oile without any decoction : but this we have referred unto our Infusions.

Pills called *Caraphotia* (because they are swallowed) are made up either of Extracts , or Powders, moistned with some soft humour of such a bignesse, as any one may swallow them : and that they may not offend in smell or taste, let them bee guilded. The close is esteemed by the working of the Ingredient, *v. g.*

The scope of the golden pills of *Nicolaus*,

lax, is to purge all humours, which Scammony performeth, but more slow flegme: therefore *Coloquintida* is added to it. But Aloes though it loosen the belly; yet it is chiefly here inserted, because according to the opinion of *Mesue* it strengtheneth all the bowels, (but especially the Stomack and liver, by opening this, and cleansing that) and by his thicknesse correcteth the acrimonie of the rest: Mastich, and Tragacanth by their clamminess, correcteth the sharpnesse; the seed of Fennell and Anise, Saffron, and Roses, correct the power which is offensive to stomach, brain, and heart; and also prepare and fit the flegm, by cutting and cleansing it: Aloes, Parsley seed, and the other seed. And because gentle purgatives are mixed with strong and vehement purgers, there is almost the same quantity of correctors, that is, ten drams, as of Purgatives, which are eleven drams: And whereas a dose of Pills ought not to exceed four scruples: this Masse ought to be divided into about 20. drams, by which name, there shall be in every dose of Aloes, Scammonie, Coloquintida, whose highest dose is ij. $\frac{3}{4}$ and 12. grains, of each 15. grains, and 3. grains. And so every Pill shall have of vehement Purgers 18.

grains, which dose is therefore the greater, because the correctors, doe not a little dull and weaken the strength of the Purgers.

By the like reason round orbicular Pellets or Trochises are framed, the strength of Agarick being an enemy to the stomach, is corrected by wine, in which ginger is macerated; and with Tragacanth (which is slow and dull) an Union is made of the broken and scattered parts; And the sharpness and malignitie of Coloquintida in the Trochises of *Alhandal*. For ten ounces (some read evilly so many Dragms, for otherwise the Purgatives should be much overcome by the Correctives, which were faulty) are rubbed with oyle of sweet Almonds, for one whole dupe; and then they are reduced into a Masse, or body, by the infusion of four ounces of Rosewater, of Bdellium, Gum Arabick, and Tragacanth, of each nine Dragms. The Masse being again dryed in the shadow being very small beaten, is at length with the said infusion brought into a paste.

Clysters are profitable in vomiting, when the sick hold not those things which they receive at the mouth, or when they can receive nothing by the mouth: They are good in a hard belly to loosen it, and the dregs

dregs or excrements ; and in a fluid or moist, to binde the same, and to thicken the excrements, or mollifie the sharpe.

For Ulcers in the guts, to cleanse and glew them together, and for diseases of the belly, of the reines, and bladder, for they can work strongly upon these parts, by discussing the vapours and windiness.

Loosning may be caused in one of full age, by a pinte of flesh pottage, of decoction, of milk, barley, or emollient herbes, of water, or whey strained (that the passages may be cleansed) and of Sugar or hony boyled (least windiness may be moved) halfe an ounce strained for cleanness ; sometimes instead of hony, we take purgative Electuaries in the same or lesse quantity, according to their faculty, and the Patients strength, and by reason of the disease, of oyle, or fat (by reason of the dryness of the intestines, and excrements) three ounces or five ; then we add, when the sharpness of the rest is not sufficient to provoke, and advance the worke, or the sense is duller in the right gut, about a dram of salt, sometimes we add a yolke or two, to wash and cleanse the guts, that they may not be hurt by the sharpness of the humours, or to dull the stirring or provoking faculty.

So ne-

Sometimes (if there be no obstruction present, for otherwise, heat by drying causeth and increaseth obstruction) in a cold distemper, a Glister is made of Muscadine, or Spanish wine, with an ounce of seeds discussing winde, boyled and strained hot, and mingled with halfe an ounce of Treacle, So you may gather by these, the use of the rest: When we would have Clisters kept a good while, we exhibite them in a lesser quantity, decocted, and avoid all sharpe things.

When either age, or custome will not endure Glisters; as

1. They that are troubled with piles, or Ulcers of the Fundament, are offended with Glysters; or if Glysters and Purges doe not work, we will draw them from the head, or the midriffe, as in old diseases, or of the stomach; then we put up Suppositories into the Fundament of young women to loosen them, of Butter, or Lard,
2. And unto people of full age, provoking and cleansing of the root of Beet scraped, annoynted with a little Butter, sprinkled with a little Salt and Hony boyled up into hardness, when the Fundament doth not perfectly feele or is moved, wee'l put on it a little purging Powder, or otherwise
frame

frame some of fit and convenient matter.

When Oyles will not cleave or fasten on the parts, Art hath invented Ointments which may stick and hold closer to, and work stronger.

1. Therefore either oyle distilled is mixed with Waxe, Manna, or the like Aieriall matter, (for cause of a more exacter mingling by reason of their simpathy) and a terrestriall matter, (by reason of his making up in forme of a liniment.) 1. And it is called a Balsome, because it commeth very near to the nature of a true Balsome. 2. Or the juycie parts of the plants are boyled with oyle, or butter (rather then their juyce pressed out) because if they have oylie or spirituuous parts in them, by this meanes, that, and the strength of it is extracted and drawn forth (which is not in the watry juyce.) 3. The dry plants are sod with equall portions, of Wine, Batter, Oyle; that the aquosity or watrynesse of the Wine, may as well restraine the collection of foule corrupt matter; and that the fire by insinuating his heat, may not change the temper of the ointment; and that the spirituuous parts, peircing by their thinnesse, may draw out the spirituuous and oylie part which is in them, and may communicate it to the oyle. Either

Either decoction is drawn } Watry juyce.
to the conlumption of the } Wine.

When the watrynes is not mixed with the oyle, and gives occasion of Putrefaction. By Olives, of which oile *omphocine* is made, we understand the wild boyled in oyle; according as *Theophrastus*, and *Athenens* conceive in their writings, because Astringent oile cannot be pressed forth, neither from ripe, nor putrified Olives, nor from unripe, which rather yeeld a watery juyce astringent.

Emollient pultisses are made with emollient decoctions, bran, and pouders, and oyle, butter, fat, honey, and the decoction strained forth, is mixed with pouders; that which is fat, is poured upon the hot (for that must not be boyled) till all things mingled come into the form of a pultiss. But those which draw from the inward parts to the *Superficies*, (as heat, nourishment, &c.) are made of sharp mustard seed, and dry figs (because they draw and restrain that the mustard seed burn not too much, which the day before are macerated in warm water, and is bruised and brought into a Masse.

When we would draw lesse violently we take equall parts of both, or two of
figs,

figs, and mustard, one of mustard, and of figs.

Cerets, are of a thicker and dryer consistence, besides pouders, oiles, and fatts, they take up waxe, and rosin (which makes them stick and cleave faster) especially Turpentine, or hard Rosin (for the mildnesse and sweetness) and they are boyled so long till they soil not the hands: The matter of them is various, according to the end which they are to be used for, which are either to repell, draw, mittigate pain, strengthen, soften, discuss, dry up, digest crudities, open, purge, conglutinate and harden a scar.

Destillation is made when the actuall or potentiall humour, is resolved by heat into vapours, and separated from his earthy dregs which presently by the compassing cold growing together drop or distill into a simple water, spirits, or a spiritous water, or oyle.

1. *Destillation* otherwise is made in *Balneo*, to prevent (a collection of corrupt matter in the whole Bulke,) and *Adustion*) *Empyreuma*.
onely upward, because the watry vapours especially are lifted up.

2. Or without *Balneum*, which we may call a dry *Distillation*: For by this, the Water and Oil descend downward, or the vapours

vapours are lifted upward, which are *Watry, Spiritous, Oylie.*

For whilst in the thing distilled, the water and spirit are both together, then they both ascend together by reason of their thinnesse, and therefore the Distillation is to be reiterated, that afterward the spirits by their thinness, may go before the watry vapours, for the water, spirit, and oile are all together : thus the waterie and spiritous vapours are lifted up together, and they by reason of their naturall affinitie, carry the oylie with them, by reason whereof the oile being separated, the distillation is to be reiterated, for severing the spirits, but if with the earthy matter, the oyle only is joyned, by a dry distillation it ought to be increased with a greater heat that it may be separated from the earthy matter (which it hardly forsakes) either by descending, or smally ascending ; to which purpose, peculiar Organs or Instruments are required.

The Spirits by reason of their lightnesse, will by no meanes descend : In *Balneo*, either not at all, or very sparingly they are lifted up ; because if the fire work not on them (which the water of the *Balneum* hindereth) they cannot be separated from the water.

The Spirits by reason of their thinnesse, and potentiall heat, that they may the sooner increase and grow together, require refrigeratories filled with cold water, which are either fastned to the top of the Elem-bick, or a right, or winding crooked Pipe is fastned with the beak of it (therefore called *Serpens*,) because thereby the Spirits staying the longer in the Cockle, doe the more put off their collection of corrupt matter, passing through the cold water of a large vessell.

In distillation which is made downward, either a Paper is put upon the juycie plants, having a linnen cloth spread over the platter or dish with good store of sand, to which hot coales are put; for as soon as the heat hath drawn forth the vapours, when they are restrained from being lifted up, being grown together, they fall down into the platter set under in drops.

Or else in rosinie woods, being included in a Potters vessell, coales being placed about them, which draw forth by their powerfull heat, that which is fattie; from whence the oile floweth, by a cover with holes (without the earthy matter) into a vessell set under, (set close to the earth for refrigeration sake) or amber melterth after
this

this manner in such a vessel, but that the thinner part of the earthy matter may not passe through the holes, we use dry sand, or poulder of flints, or tiles, or ashes of bones burnt, and to wash away the stench and blackness, a vessell below is filled up to the half with water, into which the falling drops slide or fall into another vessell, set under of purpose.

In distillation which is speedily made upward, the Spirits are separated from the water, by an Instrument of a large neck, which they call *Phyola*, a plain pot with a wide mouth, whilest as I said, the former are lifted up; as soon therefore as the waterie vapours succeed, the receiving vessell is to be changed; the other shut up the waterie vapours with a sponge, or parchment paper, set upon the cucurbite.

In this kinde of distillation, sharp, tart vapours, have this peculiar, that after (for example sake) the waterie vapours arising out of Vinegar, Salt, Vitrioll, Allum, Saltpeter, are lifted up; they are separated first without Acrimonie, (therefore wee suffer the said vapors of Vitrioll to exhale before distillation in an open Vessell) and that which is left of the waterie humour, the stronger heat doth by boyling more exactly mingle

minge with the subtiler earthy parts; till at the length it separateth and driveth forth that violently from the thicker matter.

That is called water of Salt, &c. unskillfully oyle, seeing it hath nothing common with oyle, besides the thicker consistence apparent; but Spirit (though improperly; since every Spirit is inflamable, and potentially, or virtually hot by it selfe) it may be called for his potentiall heat, but accidentall (for this from fire, which hath insinuated it selfe, and sharpness partly from fire from the said mixture) in which it differs from the nature of water, and agrees with the Spirits: If therefore those Spirits separated againe, be poured upon the earthy matter, forthwith the vapours goe forth much sharper and hotter, and by reason of their aiery and fiery nature, suffer themselves to be shut up very heavily, by which cause the recipient vessell ought to be very ample and large, least it break, before the concretion be made of the vapours.

To Distillation, which is made upward, a little Wine, or Water is sprinckled on the fresh Plants, which are not juycie enough, that you may draw away the water from the dry; If you desire onely water, something spirituous they are powred

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into

into water, wine, or water, if it be spirituous it selfe. And they are left in *Balneo* for 24. houres, that the vertue may be the more communicated and imparted to the humour.

But if you would adde fresh Floures gathered at divers times, the infusion is to be made in the Spirit of wine, in a cold place, least by placing they may be corrupted.

For example, Cinamon water; this being broken small, is hanged in a peece, in a blinde limbeck, filled with water, so as the water may not touch the bag; then let the water boyle till all the parts of the Cinamon be moist and warme fitly; then take out the Cinamon, and beat it into paste, and then again let it be infused and distilled in the former water.

If thou desirest Spirit, and Oyle out of Plants, you ought to boyle the matter before alwayes, either in his proper humour or moistness: So red Roses exquisitely brused, and stopt up in a glassie vessell, and plac'd in a cellar, till the potentiall heat actuates, and the moisture boyles up, compelled by the *Antiperistasm*i, or repulsion on every part of the cold.

Cherries with their kernels (for the Spirits lye inclosed in them) are placed in
a warm

a warme place, the Lees of Wine or Oyle being poured upon them, that their heat lying hid, may stir up the Spirit till it boyle up. Or with water poured on, and the said lees, as is done before the distillation of the Spirits, and the Oyle.

Juniper berries, Wheat, &c. are first to be brused, that the water may peirce all the parts, and the Spirit with the Oyle may unite unto it. If you separate the Spirits from the water, by distillation sometimes repeated, at the length you shall have the most pure Spirits, together with the Oyle from all Plants potentially hot.

None but a foole, will call those Infusions, or Macerations putrefaction, because this is an innated destruction of heat, that the actuation thereof, and this is a progress not unto perfection, (as that) but a passage to the corruption of the thing.

If there be a little part of oyle in it, the dry matter ought to be infused into the Spirits, that they may peirce the more, and draw the oyle with it.

The purging force, taste, sweet, bitter, salt, and the colour, seeing it is placed in the thicker earthy matter, they are not communicated to the humour in distilling (nor the smell of the purple violet, &c. by reason

of the smalnes of the odoriferous exhalation) as it chiefly appeares in the example of sirrup of Roses purging, in whose Distillation the water drawes away nothing, but the Astringent facultie ; (under which it stayeth the looseness of the belly without Inflammation) the purging part being left in the dregs ; and this very Observation ministred the first occasion to Extraction,

If water distilled (as for example) of Roses, bee often poured on fresh Roses ; the distillation being iterated, by so much the more his strength is increased ; but the same doured upon the Lees, forthwith to still, as the water of Capons, were to spend time foolishly, seeing that the qualities of flesh are communicated not by distillation, but by decoction.

When the most subtile earthy matter is mixed with oile only, as in Waxe, Sulphur, Rosins, Amber, then there is required to the distillation, some loosning spirituous matter, which may carry the oile along with it ; an humour, and earthy matter, which may keep back *Empyreuma*, and Adustion, and the ascension of the subtile earthy matter.

Such loosning things which effectuate all these together are common, Salt, *Sal gemma*, Salt-peter, Salt Ammoniack, plume Alum,

lum, pure sand, ashes of bones burnt, powder of flints, and Tiles or Bricks, these especially hinder the ascent of the earthy matter.

Distilled vinegar, and spirit of wine, have truly a loosening power, and carry the oyle with them: but to the distillation of Amber are impertinent, because they ascend before the Amber melteth, and so preserve it not from the heat or violence of the fire.

If the first distillation of Amber be made rightly, there doth not need another in *Balneo*, which they call rectification, for so much as the water washeth or taketh away of his colour, so much it taketh away of his strength.

Pitch, and Colophonie, by reason of their great viscositie and grossness, before are sod with rich wine to the consumption of the wine; that Allum afterward added may so much the easier passe or penetrate, this liquid matter, and the oyle separated from the earthy matter, may ascend more speedily.

There is another kind of distilling of oyle, when hot glowing Bricks or Tiles, broken in peeces, are quenched in the oil (from whence it is called oyle of Bricks): because it taketh from the fire his great heat, and

from the Bricks his Astriction; and being after reduced into powder, are forced out by a strong fire; that by this means they may also receive more heat and astriction, and by the same manner oyle of quick lime is prepared: And seeing it is the nature of oile, and of oylie things, that being put to the fire they are presently inflamed; these if they be actually drie, they swim above the water, contrary to all reason.

1. Amongst Oyles are reckoned, spirit, as I said of salt, the water being concrete from the vapours of brimstone, set on fire under a bell.

1. Extract of Cinnamon, which settleth at the bottome in water distilled.

2. The moistness which is drawn from Wormes being stopt up with paste in a glasse, with heat of an Oven.

3. Or which from Couflip flowers, and by insolation is drawn forth.

4. And when in like manner the white of an egge, hung in a pot with Camphire, floure of Brimstone, or Myrrhe, or Tartar burnt, mixt with a sharp moisture, the dryness vanishing or vapouring away, which they received or took from the heat, they return into their former watery nature.

Secondly, Oile is sought from stones,
Jewels,

Jewels, Mercurie, Antimonie, mettals, and out of all those things, which have now before felt the strong resolving force of fire; from Cryſtall, Tartar, Corall, Pearls, Vinegar, which hath an extream contrary nature.

Yea though Salt-peter, and Manna alſo are preſently inflamed, yet the ſcarcity of Oyle is much overcome by the earthy and cold waterie matter, ſo that rather that which is oylie in it may be conſumed by the fire, then ſeparated by diſtillation from the ſaid matter.

To draw oyle from blood by diſtillation, is to mock God, by whole Ordination, nature in the third concoction hath wrought out oyle from blood more perfectly, that is to ſay, fat, tallow, butter, which if after the common Liquefaction or coction of fleſh, and bruised bones from water, thou requireſt more pure, the temperament being unhurt, thou ſhalt ſome daies of Harveſt ſet in the ſun, that thou mayeſt ſeparate the pureſt from the dregs ſetled downward.

But behold how in a matter ſo hard and difficult they trifle here, which exhibite a Mutinie of which it appeareth not, whether it be the dried fleſh of a man or a
Q4 beaſt,

beast, and whether it came to a true Balsome; or whether it dyed not by poison, or whether or not they were not the late carcases of many men, rather annointed over with Myrrhe, Aloes, &c. then with true Balsom, and though true Balsom was used to the bodies of great men, whether in so long a time, the force and vertue bee not gone forth and expired, and by reason of the corruption which was joyned with it, whether the Indian or Succedanean Balsom, made from Oyle of Cinna-
mon, Cloves, and the like things were not much more excellent.

Now when your Oyles are distilled, and your spirits, whether those so mixt, in *Hermes* vessel by boyling them longer, it behoveth to mingle them more exactly, that from thence they may draw an *Elixir*: (which these Triflers call *Circulati*) one of the two Homogeneall principles, that is to say, of the aire.

One truly increaseth the heat and smell of the other, and the same faculty or strength which is in the smell, but here observe the madness of *Quercetan*, above or beyond all his other doatings, he mingeleth (*pag. 60. Lips. edit.*) 59. Medicines, which every on

1. Either strengtheneth the principall parts,
2. Re-

2. Refresheth the spirits. 3. Breaketh the strength of poysons. 4. Resisteth putrefaction. 5. Cutteth grosse thick humours; And he calleth it a specificke Medicine to cure inveterate diseases, giddiness, falling-sicknesse, pallsie, madness, melancholy; but how that may be called a speciall or specificke Medicine, which is composed of so many different species or sorts, which is directed for diseases, which are most different in causes, and in kindes.

Seeing this Medicine consisteth for the greatest part of hot things, and heat may be increased in distillation, with so frequent, and so much fire, it ought to be most hot, how then can it be profitable to some hot causes of these diseases?

How can the strength which is placed in the earthy matter, and in the temperaments of the said Medicines, these being destroyed remain, all the rest being removed and taken away. Besides his manner of preparation is full of vanities and deceits, why are the first spirits distinctly taken, when afterward they are to be mixed? what need is there to pour forth the spirits upon the lees or dregs prest out, or calcined; the spirits being lifted up, if the oyle bee not carried together with them.

How

How only doth that, and that which is pure ascend afterward? what have honey and sugar here to doe.

To a dry destillation, sublimation also belongeth, for it is done after the same manner by sand, when the most thin earthie matter of Sulphur, Salt, Antimonie, green rust of Brasse, and Stibium, is elevated by a strong fire, till it stick to the sides of the Still, like a most thin powder. I distill, I say, of Brimstone (least all the earthy matter may not be lifted up) and of Vitriol calcined, and salt poured forth (that all the waterie humour may be taken away) of each equall parts, and I increase the fire more and more, whilst almost all the Sulphur ascendeth, when it cooleth again, I add again to the Sulphur sublimed, taken away of the said Vitriol and Salt, of each equall parts, and in the like manner or reason distill it.

Almost after the same manner, are flowers of Stibium made, (but that to the correcting of his virulency, and least he should inflame in calcination) Salt-peter, and Tartar is added; these being together set on fire, are calcined in an earthen vessell, that the poyson may exhale away; what is calcined we wash with water, (to diminish and lessen the virulency) let what is washed be melted, and the melted

melted powdered and elevated in a smal sublimatory, for it ascends flow and heavily.

By the like reason from Quick-silver, to which, re-purged by Oxalmen, *aqua fortis* made of vitriall, and Salt-peter is added; afterward *aqua fortis* again by distilling is drawn away, & that is thrice poured on with *aqua fortis*; then to the Mercury beaten Spirit of vitriol is poured, that so for the space of 24 hours, the Spirits may exhale at a strong fire. Lastly, I digest that Powder, either in Spirit of Wine upon Sand, in a bilnd Limbeck, and to these poured out put on others, and do so thrice, that I may have the precipitate; or else I increase the fire in a small sublimatory underneath, till the glasse is fired or heated with a purple brightness, and a citrine or red flowers ascend, (and so I have the sublimate) upon which I poure the Spirit of Wine, and after take them away by distillation; the distillation being thrice repeated.

Here, I pray, observe Reader.

1. That an actuall humidity is taken from Mercury, by exhalation, whose cause is fire, which actuateth the exhalation, and *aqua fortis* (which by the simpathy it hath with Mercury) by reason of the originall humidity, receiving the fire into it selfe, otherwise avoyding this enemy of Mercurie,

cury, detaineth the Mercury in the fire; and by this meanes taketh away his actuall coldness and moistness, by exhalation of his actuall humour; so that the moist remaining parts which are in him, are more exactly mixed with his earthy matter; by which mixture and insinuation of fire into Mercury, it taketh his strong sharpness, and caustick power.

2. That Mercury by interveniency of *aqua fortis*, receives the fire into it selfe, is manifest from his colour; first white, and then yellow, with redness.

3. But whether from Mercury and Antimony his venenosity, from Sulphur his sharpness, by this or the like manner may be diminished or taken away, experience will teach thee the contrary; therefore take none of them into your bodie, whatsoever preparation be made of them, and beleeve not *Quercetan* whose primary Chymick Medicines, are Mercurie, Antimonie, and Minerall Spirits.

4. That the drying cause ceasing, Mercurie returneth to his former humiditie is the chiefeft argument: that that should be numbred amongst the mettals; but in all his nature it is contrary to mettals, although it doth very much counterfeite a simparchie;
Since

Since from heat, and *Aqua fortis* it may be reduced into powder, but reduced into liquor from these: Mettals offer violence unto mettall, when it is mixed with those melted: For it maketh those soft, which naturally ought to be hard.

7. Extraction, properly so called, is a separation of a most subtile earthie and oylie matter, (if there be any in it) with his faculty or strength by Infusion, Expression, and Distillation, as well as from his thicker earthy matter, as well as from his moist waterie, the spirits for the most part exhaling together. For by Infusion and Expression, the most pure earthy and oylie matter, is communicated to the liquor, and the thicker separated.

By distillation the waterie humour is separated to the consistence of honie, or new-wine sodden to the consumption of the third part, and the remaining matter is exactly mingled in boyling: although those extracts which want oyle, nor were infused in spirit of wine, are afterward dried altogether in the heat for preventing putrefaction, from whence the strength of the Medicine is greater in a small portion, then in a great, whilest as yet the thicker matter, and the liquor are joyned together.

Quercetan

Quercetan biddeth, that the matter yet warme, if it be oylie, (as it is in *Guaiacum* wood, and *Sassafras*, and Juniper Barke) bee poured forth into a glassie dish or platter, full of Water for coagulation sake: but that is all on, whether it be done or intermitted, for it is nothing available for Physick intentions.

To *Extraction* chiefly are requisite and fit, simple and compound Medicines, bruised in peeces, (that the liquor may more easily penetrate) which have their strength especially placed in the earthy matter, such as are those chiefly, which are of a strong smell and taste, and most part purging.

From liquors, 1. water, water distilled of the same kinde, or which are serviceable for the Physicall intention. 2. Wine, and Spirit of Wine. These truly more penetrating the matter, and by mingling themselves with the most subtile parts, sooner draw forth the strength, and longer bear the stay or continuance of the Infusion without Putrefaction; but worke it so that the Extract may better agree with hot temperament or diseases, because the Spirits are rather carried upward then downward.

It is fit and convenient that Infusion and
Mace-

Mecceration should be made in *Balneo*, in a Vessel most carefully stopt (that nothing may breath out) that by help of the actual heat, the humour may penetrate the more, and imbibe the facultie.

The time of Maceration or soaking, is to be judged from the consideration of the things infused (for hard and Rosinous things such as *Guaiacum*, are macerated to stirre them) till the liquor poured on is mingled sufficiently with the oylie matter, or is sufficiently tinted or affected with the colour, or savour of the medicine; for then either other liquor is poured on the same matter, and that so often reiterated, till such time as it is no more affected with tincture or savour, and then at length all the liquors affected, are put together and distilled, the Extract being left in the bottom of the Vessel or Bladder: After this manner *Rubarb*, *Rhapeticum*, *Aloes*, *Gentian*, *Cinnamon*, *Nutmeg*, *Myrrhe*, or else the said liquor affected, is poured on the plant of the same kinde, and it is twice or thrice reiterated: So is *Cinnamon*, *Wormwood*, *lesser Centurie*, *Angelico root*, *Zedoarie*, *Galingal*, the true *Acorns*, and *E-lecompane root*, which neither give tincture, nor are indued with manifest smell

or favour; they are macerated, or soaked for one day or two, and then the liquor pressed forth is poured upon a plant of the same kind, and this is done twice or thrice: In like manner distillation is made in Mechoashau, Bryonie, Pyonie, Masterwort root, &c. In the Extraction of fresh Flowers, of Peaches, Plums, Roses, Flowers, Herbs, and Roots of Celandine, &c. There is no need of effusion, or putting on of any other moisture, but the reiterated, pressing forth of the juyce often, ought to go before the distillation, and the Infusion into the moisture pressed forth of the fresh Flowers, and Herbes: But to bruise Celandine, and distill it, and to put the distilled water, upon the dry Lees, &c. is trifling to no purpose, in so great plenty of Celandine, experience it self in the strength of either Extraction will be testimony sufficient.

But seeing the Extract of the Roots of Bryonie, Ireos, and Cuccopintle may be made after three manners: That is to say, That either dried, they may be infused in spirit of Wine, the juice pressed forth out of the fresh Roots distilled: Left in a Celar for a few dayes, and then the white troubled water poured forth, the white Lees

Lees may be dried in the shadow.

The Question is, which way may best draw forth the strengths or vertues of them; for persons troubled with the Mother, Hydropicks, or those which have an ill habit of bodie. *Quercetan* preferreth the third way, I the first; Let reason and experience conclude the controversies and determine it.

For first, heat is required in all the three Effects, or Dispositions, which here the Spirits of Wine administer to them.

Secondly, Crude juyce is lesse apt, because it is it selfe a phlegmatick matter, and cannot choose but be corrupted by the moist aire of the Cellar, and hath nothing which may preserve it from corruption.

Thirdly, The faculties of these consist not in the thin matter which goeth forth with the Water distilled, but rather in the thick earthy matter, as their Pouders shew plainly.

Quercetan, in glutinous and clammy roots addeth a half part of white bread in their Infusion (that the nourishment mixt with the Medicine, may as well by his clamminess increase his glutinous strength, as derive, or convey, the Medicine the sooner to the liver,) and being all moistned

R

with

with wine, placeth them in *Balneo* till they become red, and moreover digesteth the juyce waxing red (that it may become the redder) being pressed forth; for truly the simple man thinketh the red juyce will be sooner turned into blood, and so also the red wine, (and by the long snout of *Me-leagers Bear*) before distillation: But I say, we may more commodiously draw forth the nature from bread exhibited by it selfe; but if there be need of extraction of the glutinous or clammy part from corne, and drawing the Medicine through the veines; all true Phylosophers (not such Sophisters) will with me, preferre decoction far before it, with which the thick glutinous *Dansick Beer* is made, if with the said extract (made without bread) that may be mingled.

He also infuseth black Hellebar in vinegar, (being most adverse to the spleen) to draw forth the faculty for diseases of the spleen, and will have the proper salt mixed with the distilled waters, as also others with the extracts; to what end I pray? for seeing every faculty which was in the Medicine, before calcination, by this is taken away; whether that he may corrupt the extract, or water by his sharpness, or by his

his dryness keep back putrefaction ; or that beyond others he may seeme to favour better. The same man extolleth without any judgement his oleous extract of *Guaiacum*; for seeing in the cure of the French disease, and the Catarrhe, there is first or chiefly required some astriction, by which the members may be strengthened together ; truly for this intention, every man understands decoction to be far more needfull and usefull, which hath any judgement ; although a small dose of the extract, be fit for those which shall use it, especially for delicate and tender persons.

And in his Extract of mans Skull, he is altogether childish, as of the Secondine, a Calves liver and lungs, Pearls, and Coralls.

For what doth he draw forth of the Spirits from the Skull, other then a certaine fat, and something from the earthy matter, and ashes by decoction in *Balneo* ? but will that Extract take away the causes of such a disease as the Falling-sickness ? he will hardly perswade children to it : from the Secondine, Liver, and Lungs, what I pray, can be drawn ? the broth of their decoctions, yea, even the substance it selfe eaten, and the powder of the Secondine ; will it not offer nature the strength it selfe per-

fecter to be extracted ? Pearles and Corals onely beaten, will yeeld all their vertue they have received from Gold, without any trouble of dissolving or washing with water of corrosive spirits.

Whether hitherto have not all kinde of preparation of Medicines been unfolded by us : Truly they have been altogether : But where are their Medicines so much cryed up, their Secrets, their Magisteries, Mercuries, Sulphurs, Elixirs, Tinctures, Quintessence. This Talkative Chymick *Apollo*, hath invented and framed words without matter, from that infernall desire of lying and coufening, to gain to his Sophisters authoritie, an opinion of subtile wisdom.

20805.

But if we shall speake properly, a Secret and Magisterie are the same, nor are they speciall, but most generall Appellations of wittie Inventions ; And the tincture is the Extraction of the proper colour, which seeing it is not a Medicinable qualitie, it ought to be most estranged and alienate from true Physick preparations. I omit that for the most part it is sophisticated (as for example) spirit of wine, draweth his redness from white bones and ashes, and black Treacle ; and this every liquor potentially
hot

hot will perform, especially if the earthy matter bee also endued with heat, which Turners doe, who shave pure white plates, ———from yellow Amber: But this is of an Optick contemplation: When we Germans would expresse a thing dissolved by concoction, and say it is neither boyled nor roasted; Of which kind peradventure, *Elixir* might first get his name.

A Quintescence presupposeth four other things: If they reckon up the four Elements, this Quintescence will be some divine thing, which is false, seeing from a corruptible Elementarie bodie, a divine thing is not made, (being different in the whole kind) perpetuall, lightsome, and endued with a circular motion, and seeing they are separated also by a most long distance of places.

Neither is Mercurie it self so inconstant and mutable, as they are in defining their Mercurie and Sulphur; they have often affirmed to my face, that by these terms they have meant a Quintescence.

From all which it is most apparent, that great wrong hath been done to the *Galenists*; 1. Whilest the *Paracelsians* object, and obtrude ignorance unto them of pre-

paration of their Medicines, and impudently arrogate the knowledge of their preparation to themselves onely. 2. Whilest *Quercetan* ascribes onely to himselfe by his New *Pharmacopea* the knowledge, and skill of this Art, in which notwithstanding he hath brought in, or innovated nothing at all, hee hath discussed nothing by their causes answerable to a wise mans judgement, he hath exposed or set forth nothing of his own invention of any worth or moment; what he received or got from the Germans in his travell, he venteth it forth for his own inventions, and hath propounded and set many things forth of divers kindes, false and idle, and which are not pertinent to the Apothecaries trade and profession.

And contrarily he hath left out and omitted better ancient Medicines, and hath thrust worse in the place of them, and very many manners and wayes of preparations, which chiefly the Art of compounding and making up of Medicines requires; For which severall causes, this *Pharmacopea* doth rather deserve to bee stiled, A Bundle without Method, of certain Medicines to blind and deceive men ignorant

ignorant and unskillfull in the Art of
Physick, that the selfe-conceited they may
learne to calumniate the truth, brag and
vaunt forth their vanities and smokes,
despise true wisdom, by spreading forth
very gainfull Flowers of Hermetical Fla-
teries.

R 4 A



[illegible]

THe commoditie of judgement by it:
The manner and order of generation of
Urine.

When the Urine should be taken.

What Urinall is best to this use.

What light is best to see an Urine.

How long it may be kept before it be seen."

That it ought not to be shaken before it be
judged.

*That it must be kept wholly, and not a part
of it only.*

These things hinder judgement.

Much shaking of it.

Darkness of light.

Over-bright light.

The beams of the Sun.

Cold, and Winde.

A thick or green

Urinall: and al-

so if the Urinal

bee not due in fa-

Shion.

These alter the Urine.

Diversitie of kind. } Man.
Woman.

Distinction of } Childhood } Manhood.
Ages. } Youth } Age.

Complexion. { Sanguine. } Melancholy.
 { Choleric. } Phlegmatick.
 Diver-

A Univerſall Table Diverſitie of Countries.

Times of the year. { Spring. } Harvest.
 { Summer. } Winter.

Meat and drink.	Long ſleep.
Medicines, namely	Anger.
Purgations.	Fear.
Exercise and reſt.	Company with Wo-
Much faſting.	men.
Surfeting and drun-	Gleat ſolableneſſe.
kenneſſe.	Strong coſtivenenſſe.
Much watching.	Much Vomit.

Theſe are to be conſidered in Urine.

1. The Subſtance { Thick.
 Mean.
 Thin.

2. The Quantity. { Much.
 Mean.
 Little.

3. Cleerneſſe and darkneſſe.

4. The ſavour.

5. The manner { With pain. } Willing.
 of piſſing. { With eaſe. } Unwilling.

Light white. { Chriſtallie.
 Snowie.
 Waterie.

6. Colours. { Dark white. } Milk white.
 Hornie.
 Grey.

Pale.

Flaxen

for Judicials of Urine.

Flaxen.

Yellow or gold colour.

Saffron. { Light saffron.
Full saffron.

Claret.

Red.

Crimson.

Purple.

Blew.

Colours.

Green. { Light green.
Green as grasfe.
Stark green.
Dark green.

Oylie. { Light oylie.
Stark oylie.
Dark oylie.

Ash-colour.

Black.

7. Contents. { The Sediment or ground.
The sublimation or swim.
The Cloud.

8. The Crown, or Circle.

9. Bubbles.

10. Fatness.

11. Difform contents. { Hairs, like red Fatches.
Branny. { Gross.
Fine.
Scales.
Ragged scraps.

Motes.

A Universall Table

<i>Difform</i> <i>Contents.</i>	}	<i>Motes.</i> <i>Matter.</i> <i>Blond.</i> <i>Gravell, or Stones.</i> <i>Seed.</i>
12. <i>The Regions.</i>	}	<i>Highest.</i> <i>Middle.</i> <i>Lowest.</i>
13. <i>The Order.</i>		
14. <i>Continuance and Alteration.</i>		

*These in generall be the things meet to
be considered in Urine, of which
particularly in this Book you may
read as much as to this time and
purpose serveth.*

The

The Contents of the Chapters of this B O O K.

O F the Division and Order of this Book.	folio 1
How Urine is ingendred in man, and how it passeth forth.	2
What Urine is, and what tokens it giveth in generall.	3
Of the form of the Urinall, and of the place and time meet to judge Urine, and how it should be received.	10
How many things are to be considered in Urine.	12
What a perfect Urine is, and also how ma- ny wayes all parts of the Urine may be altered in a healthfull man.	18
The difference of Urine by age in men	20
Of the Urine of Women by age	ibid.
The diversitie of Urines, according to the times of the year	21
What bee the generall qualities that alter the parts of Urine.	26
The Significations of the parts of Urine particularly.	31
Of Claret and Red Urine.	43
Of Crimson Colour.	44
Of Purple Colour.	45
Of Green Urines.	46
	Of

The Contents of the Chapters.

Of Oylie Urine, or Popinjay green.	47
Of Blew Urine, Ash-colour, and Black.	48
Of Difform Contents.	66
Of the Garland, and other like things	81
Of the Commodities and Medicines of Urine.	86
Of the Diseases touching Urines, and the Romedies for the same.	94
Of the Diversities of Colours, and of the making of them.	100
The Exposition of certain dark Words appertaining to the Art of Physick, used in this Book.	104
A Detection of Unskilfull Physitians	123
Of Ignorant Apothecaries.	151
Of the Boldnesse and Ignorance of divers Chirurgions.	159
A Translation of Papius concerning Apothecaries.	185

FINIS.

7
8
6
i
of
6
e
4
e
o
o-
d
4
3
i
s
9
-
5